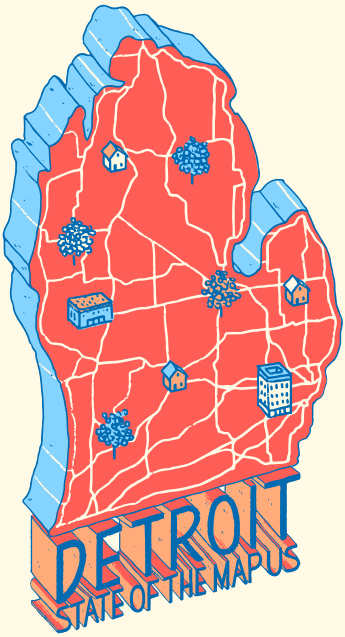

Conference Program

October 5-7, 2018

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Program

Join for three days packed with talks, workshops, hacking, mapping parties and meetings all around OpenStreetMap!

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Welcome

Thursday, October 2018

Join Geochicas from 5:30-7 at a pre-event gathering to meet other women who are interested in closing the gender gap and working towards diversity in our communities. We welcome anyone who perceives herself as a woman. After that everyone is invited to and evening social event to welcome attendees from 7pm - 9pm hosted by Loveland Technologies. Both gatherings are at Ready Player One (407 E Fort Street Detroit MI 48226)

DAY 1
October 5, 2018

Registration in the morning at Cobo Hall. Get here early to pick up your badge, t-shirt and to find a seat for the start of the program. Speaking sessions will occur throughout the day. Hear from your fellow OpenStreetMap community members about what they're working on. Boxed lunch will be provided so you can continue the conversation while you eat!

Join your fellow attendees for drinks and food at one of Detroit's breweries. Discuss what you learned, why you are excited and relax before the next day! HopCat Detroit (4265 Woodward Ave Detroit, MI 48201) from 6:30pm - 9:30pm

8:00am Registration / Coffee and Tea

9:00am **A Welcome and Update from the OSM-US Board (Room 410AB)**

9:30am

ROOM 310 A — 20 MIN

Detroit: The Best Open Map in the World D
Dexter Slusarski, City of Detroit

ROOM 310 B — 20 MIN

Transportation as a Service – Using OSM at Lyft to Improve Your Ride G
Alexandra Kazakova, Lyft & Renee Park, Lyft

10:00am

ROOM 310 A — 20 MIN

Blight to Boom: Collaborating to Map Change D
Janine Yoong, Mapillary

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Philipp Kandal, Telenav

10:30am Break

11:00am

ROOM 310 A — 50 MIN

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Building Abroad Community C
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11:30am

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Miriam Gonzalez, Geochicas and OpenStreetMap Latam

12:00pm Lunch

1:00pm

Room 310 A 20 MIN

Validation of the Users, by the Users, for the Users Q
Matthew Gibb, Radiant Solutions

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Space to the Power of X R
Kevin Bullock, DigitalGlobe

ROOM 410 A 90 MIN

Workshop: Traces of the Past: 1812 Detroit
Bert de Bruijn, WikiWar Heritage Council

1:30pm

Room 310 A 20 MIN

POI Data Illuminated Q
Diana Shkolnikov, StreetCred

Room 310 B 20 MIN

OSM: All Your (Esri Vector) Base Are Belong to Us R
Jessica Acosta Rodriguez, Esri

2:00pm

Room 310 A 20 MIN

Can We Validate Every Change on OSM?
Manohar Erikipati, Mapbox Q

Room 310 B 20 MIN

OpenStreetMap as an AWS Public Dataset and it's Uses R
Joe Flasher, Amazon Web Services

2:30pm

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Lightning Talks L
Curb Mapping, iD, iD Notes, Open Cities Africa: Open Data for Disaster Risk Management, Using Addresses in Africa

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The Machine Mappers are Coming M
Eric Gunderson, Mapbox

3:00pm

ROOM 310 B 20 MIN

OSM at Facebook M
Drishtie Patel, Facebook

3:30pm Break

4:00pm

Room 310 A 20 MIN

Discover Rural America U
Clifford Snow

Room 310 B 20 MIN

Historical Change Mapping Using OSM as a Platform O
Matthew A. Hanson, Development Seed

ROOM 410 A 90 MIN

OpenStreetMap Data Analysis Workshop
Jennings Anderson & Seth Fitzsimmons, Pacific Atlas

4:30pm

Room 310 A 20 MIN

Inclusive Pedestrian Mapping: OpenSidewalks, AccessMap, and Accessibility U
Nick Bolten, University of Washington/ Taskar Center/OpenSidewalks

Room 310 B 20 MIN

OSM vs. Blockchain to Tell the Historical Mapping Story O
Jeremy Lechtzin, Street Deets

5:00pm

Room 310 A 20 MIN

The OpenStreetMap US Camera Lending Program U
Martijn van Exel, OpenStreetMap US

Room 310 B 20 MIN

SharedStreets: Making Streets nteroperable
Kevin Webb, SharedStreets O

DAY 2
October 6, 2018

Another great day of talks and workshops. For those that missed registration on Friday it is available again on Saturday.

Join your fellow attendees at the Michigan Science Center. Can you say planetarium? It will be running! Have a drink, eat some food and explore the museum from 5:30pm - 8:30pm. (5020 John R St, Detroit, MI 48202)

8:00am Registration / Coffee and Tea

9:00am **Keynote: Mapping to End FGM and the Role of Female Mappers (310A)**

9:30am

ROOM 310 A 20 MIN

Filling in the Gaps with the Mapillary API S
Christopher Beddow, Mapillary

ROOM 310 B 20 MIN

OSM in World Bank Operations: Analyzing Green Space in Tbilisi, Georgia I
Charles Fox, World Bank

10:00am

ROOM 310 A 20 MIN

OpenStreetCam Is Now An Open Machine Learning Platform for OpenStreetMap S
Adrian Margin, Telenav

ROOM 310 B 20 MIN

OSM for Disaster Management: City Wide Mapping Project (Jakarta,Surabaya and Semarang) I
Harry Mahardhika Machmud, HOT

10:30am Break

11:00am

ROOM 310 A 20 MIN

MapRules: Custom Tagging Presets & Validation Rules W
Max Grossman, Radiant Solutions &
Clarisse Abalos, Radiant Solutions

ROOM 310 B 20 MIN

Connecting Educators to OSM Community Members & Vice Versa: A Discussion E
Celeste Reynolds, Mashpee High School

ROOM 410 A 60 MIN

Introduction to R + OSM
Angela Li

11:30am

ROOM 310 A 20 MIN

United States Destination Tags W
David Koons, Kaart

ROOM 310 B 20 MIN

Connecting Educators to OSM Community Members & Vice Versa: A Discussion E
Derek Sheets, Broward Schools

12:00pm Lunch

1:00pm

Room 310 A 20 MIN

Microgrants to OSM Communities: What Worked, What Didn't G
Rebecca Firth, HOT

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Building AI-Assisted Mapping Tools: Progress and Lessons Learned M
Drew Bollinger, Development Seed

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Getting Started with OpenStreetMap for Educators
Shawn Goulet, Maggie Cawley, Richard Hinton, Steven Johnson

1:30pm

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Climate Change Impact Assessments with OpenStreetMap G
Ethan Nelson, OpenStreetMap

Room 310 B 20 MIN

Analytic Support for Contributors: Defining Levels of Automation for Machine Learning Applied to Crowdsourced Mapping M
Ryan Lewis, In-Q-Tel CosmiQ Works / SpaceNet

2:00pm

Room 310 A 20 MIN

Raising and Growing Passionate OpenStreetMap Humanitarian Mappers using Social Media and Gamification Techniques: Examples from Nigeria G
Victor N. Sunday, & Odeam Valerie Osuampke, University of Port Harcourt

Room 310 B 20 MIN

Semi-Automated Map Editing M
Favyen Bastani, MIT CSAIL

2:30pm

Room 310 A 50 MIN

Lightning Talks
When Seeing Isn't Solving, Visualize Change, Michelle Steigerwalt / Planet data, Small footprint vector maps for "Internet In a Box", Building links between AGS and OSM, OSM Counts

Room 310 B 20 MIN

Why Geocoding is Hard and How You and OSM Can Help Y
Julian Simioni, geocode.earth

ROOM 410 A 60 MIN

Creating Superlative Classroom Mapping Projects
Shawn Goulet, Celeste Reynolds, Maggie Cawley, Richard Hinton, Steven Johnson

3:00pm

ROOM 310 B 20 MIN

Offline Maps for Mobile — Making Maps That Are Mobile First Y
Rob Chohan, RobLabs.com

3:30pm Break

4:00pm

Room 310 A 20 MIN

The Map Quality Measurement Initiative: A Heat-map Approach to Visualize Gaps in Map Quality Q
Muning Brandeis, Critigen

Room 310 B 20 MIN

Map Matching When the Map is Wrong T
James Murphy, Lyft

ROOM 410 A 90 MIN

Make Your Own Custom Heatmap with OpenStreetMap Data and Mapbox
Minh Nguyen, Mapbox

4:30pm

Room 310 A 20 MIN

Urchn Tells You Where Cities Change, and Where OSM is Out-of-Date Q
Derek Lieu, Development Seed

Room 310 B 20 MIN

Maps For All Maneuvers Q
Yuanyuan Pao, Lyft

5:00pm

Room 310 A 20 MIN

Kaart's Quality Checks to Improve Road Data and Routing Q
Ian Malott, Kaart

Room 310 B 20 MIN

OSM in UrbanFootprint: Combining Walk Network with Transit Schedule Data for Non-auto-based Accessibility Measures Q
Kuan Butts, UrbanFootprint

DAY 3
October 7, 2018

This year we've mixed it up a little. On Sunday, come for more full length talks as well as lightning talks.

8:00am Registration / Coffee and Tea

9:30am

ROOM 310 A 20 MIN

Applying Big Data Tools and Techniques to OpenStreetMap with OSMesa B
Seth Fitzsimmons, *Pacific Atlas*

ROOM 310 B 20 MIN

OSM and Land Use Planning - City-Scale Scenario Development for the Future of Cities P
Jamie Alessio, *UrbanFootprint*

10:00am

ROOM 310 A 20 MIN

OSMnx: Visualization and Analysis of OpenStreetMap Networks in Python B
Geoff Boeing, *Northeastern University*

ROOM 310 B 20 MIN

Pic4Review: Mapping with Street-level Imagery P
Christopher Beddow, *Mapillary*

10:30am Break

11:00am

ROOM 310 A 50 MIN

Generate Real 3D Worlds for Automotive Simulation & Training in 20 Minutes or Less X
Miroslav Lysyuk

ROOM 310 B 20 MIN

Lightning Talks
FOAM, Future Transportation, Transit Coverage, Road Data Collection in Laos, HOT Data

11:30am

ROOM 310 B 20 MIN

Breaking Down Silos: OSM and Esri Side by Side X
Steve Moore, Esri

Session **Descriptions**

A Welcome and Update from the OSM-US Board

The OpenStreetMap US board of directors will welcome everyone to the State of the Map US. We'll give an update on OpenStreetMap US, Executive Director hiring, and the state of the organization. Ask questions and learn more about OSM US!

FRIDAY, OCT. 5 | 9:00AM | 20 MIN

ROOM 410 AB

Detroit: The Best Open Map in the World

D Detroit

Dexter Slusarski

City of Detroit

The City of Detroit has issued a challenge to the OpenStreetMap US community to make Metro Detroit the best openly mapped region in the world. This session will provide an overview of data sources and methodologies used in this challenge, highlighting Detroit's initiatives to make city data available to everyone. We will showcase a series of lightning talks presenting the outcomes of the challenge, with a focus on efforts that combine the wealth of available data and technology with local knowledge and experience. We will discuss what we learn that can be sustained for ongoing mapping in Detroit and applied to similar initiatives in other cities.

FRIDAY, OCT. 5 | 9:30AM | 20 MIN

ROOM 310 B

Transportation as a Service – Using OSM at Lyft to Improve Your Ride

G Global Community

Alexandra Kazakova and Renee Park
Lyft

Lyft is a leader in the hyper-competitive world of ridesharing, providing millions of rides a day across the entire United States. Mapping is a key component to every part of Lyft operations from providing accurate ETAs, multiple passenger pickup and drop off scenarios and a seamless user and driver experience in both rural areas and urban canyons.

The small but growing OSM team at Lyft has been tackling some tough and not so glorious mapping within OSM including hyper-attributing the road network, adding toll locations, lane counts, bike lanes and pedestrian crossings. With the recently announced Autonomous Vehicle team, Lyft is looking new ways

to bridge the gap between community contributed content in OSM and the high precision and high accuracy mapping needs required by the next generation of autonomous vehicles.

In this talk, we will present on some of these challenges at Lyft, what our team is using from OSM, what Lyft may be able to contribute back and how corporate values of taking a harmonious and collaborative approach with local governments and the community it serves can apply equally to OSM.

FRIDAY, OCT. 5 | 9:30 AM | 20 MIN

ROOM 310 A

Blight to Boom: Collaborating to Map Change

D Detroit

Janine Yoong
Mapillary

The revival of Detroit has been the photo-journalist's favorite beat in 2018. OpenStreetMap enables the city councilman, the land bank official, and the homeowner, to go beyond images of blight and recovery toward a deeper understanding of how the city is changing. Since emerging from bankruptcy, 25% of the 40,000 blighted homes in Detroit have been demolished — combined with streetscape improvements, property values in most neighborhoods have increased. But which neighborhoods are being left behind, and why? This session will illustrate how local knowledge and disparate data sources come together to create a rich, evolving map of Detroit, highlighting the City of Detroit's use of street-level imagery by the nation's largest land bank.

ROOM 310 B

FRIDAY, OCT. 5 | 9:30AM | 20 MIN

OSM In Every Car... Closer Than You May Think

G Global Community

Philipp Kandal

Telenav

In this talk, the Telenav Mapping Team will talk about the tens of thousands of hours of mapping they did to improve OpenStreetMap in the United States in the past 5 years, and what all that mapping together with the OSM community allows us (and others!) to do with OSM to power the future of driving. Launching OSM powered Scout smartphone navigation in 2015 was a milestone, but it was just the beginning. For the last 2 years, we have zoomed in on Detroit and other cities to prepare OSM for advanced navigation by adding features like lane directions / turn lanes, traffic signals, and turn restrictions. We will also give an overview of the data OSM will need to power future driving use cases, and where OSM is most ready.

FRIDAY, OCT. 5 | 10:00AM | 20 MIN

ROOM 310 A

OSM for Automotive

A Automotive Panel

Panel

Industry perspective on how vehicles, local governments, and open data communities like OSM can work together to enable more efficient transportation solutions. Panel will discuss new mobility initiatives taking place in the city of Detroit and explore areas where collaboration is needed.

The panel will be moderated by Marc Prioleau from Mapbox and will include Mark De la Vergne, Chief of Mobility Innovation for the City of Detroit, Kevin Webb from Shared Streets, and representatives from the local car manufacturers and ride share service providers.

ROOM 310 B

FRIDAY, OCT. 20 | 10:00AM | 20 MIN

Building Abroad Community

C OSM & Corporations

Kiana Ziola

Kaart

There is a prevalent need to establish effective and lasting relationships between members of the OpenStreetMap community. More reliable and complete data is an accomplishable goal for OSM, if communication and standards for mapping are thoroughly established. Editors will be less likely to conflict with each other and more likely to effectively progress in the modification and addition of data, if these relationships are established. As we know, OSM is open source, which means that it couldn't exist without the members that contribute. Steps must be taken to promote collaboration amongst active editors, local and remote.

In this talk, I will provide firsthand examples that highlight the difficulties and solutions that KAART has encountered while building community between remote and local editors. These methods directly relate to the emphasis that must be placed on communicating and working within the the community that OSM has to offer.

FRIDAY, OCT. 5 11:00AM | 20 MIN

ROOM 310 B

The Road Towards Diversity in OSM Still Needs to be Mapped

C OSM & Corporations

Miriam Gonzalez

Development Seed

Geochicas is a young initiative with big challenges. The first gathering was in SOTM Latam Sao Paulo in 2016 and since then, we haven't stop our efforts to make OSM members aware of the lack of diversity in our community.

Geochicas has developed an ongoing discussion about the need to create more initiatives that encourage participation of women in OSM, their active role in decision making spaces and more projects and activities led by women. We had created a few projects in the ones we seek to understand gender balance, hostile situations and the need or not of CoC in OSM. We found that many contributors perceive the lack of gender equality but do not see the necessity to shift the numbers nor increase the debate because they don't believe in mapping as a sociopolitical practice and instead believe in maps as neutral and have nothing to do with a contributors' gender condition.

In this talk we want to share the projects we had developed to integrate more women in the mapping community, show some of the results that the initiatives created are helping to encourage more female mappers to lead projects and share knowledge among everyone.

ROOM 310 B

FRIDAY, OCT. 20 11:30AM | 20 MIN

Validation of the Users, by the Users, for the Users.

Q Quality

Matthew Gibb
American Red Cross

New techniques, like machine learning, are changing how the OSM community maps, but the need remains to help users become better mappers and to improve data quality. As more groups begin to utilize these techniques to build and contribute to the map, a community of trained validators will become as crucial as ever. Human users are and will remain the most important part of the map.

This talk will showcase workflows that use well-known, yet often siloed, tools such as the Tasking Manager, Osmose, Maproulette, and other similar software options to provide users with feedback needed to fix not only their own errors, but also to build their confidence in improving others' contributions! Using these workflows can help foster a community of new and experienced users, humanitarians, private companies, and hobbyists alike, and well-trained and practiced mappers will result in a more useful map for everyone.

By focusing timely validation feedback on the user, we can grow the number of returning mappers, encouraging them to be a part of a community, and build upon user's skill sets to keep them contributing beyond their first edits.

FRIDAY, OCT. 5 1:00PM | 20 MIN
ROOM 310 A

Space to the Power of X

R Resources for Mappers

Kevin Bullock
DigitalGlobe

During SOTMUS 2017, DigitalGlobe was finalizing a merger to create a new aerospace company called Maxar: http://www.maxar.com/our-company/meet-maxar. Now, DigitalGlobe has even more to offer to OpenStreetMap and the OSM Community:

- We have had a ton of feedback regarding the DigitalGlobe imagery released for OSM editing. I plan on hitting some of the major questions and feedback.
- We have launched GBDX Notebooks which simplifies AI and ML on satellite imagery, and opened up a ton of imagery as well (Following up on Sean Gorman's presentation from SOTMUS Boulder).
- Our Open Data program is bigger than ever, with huge releases in the US (and globally) covering hurricanes, fires, tornados and flooding. These have been heavily utilized by HOT.
- We now have radar capabilities which enable change identification. We can analyze what is missing from OSM and would like to propose a pilot project with the OSMUS community.
- We also have had a very successful SpaceNet challenge and would like to share those results and talk about future challenges. http://explore.digitalglobe.com/spacenet.

ROOM 310 B
FRIDAY, OCT. 20 1:00PM | 20 MIN

POI Data Illuminated

Q Quality

Diana Shkolnikov
StreetCred

Let's stop collecting data in the dark! Data coverage statistics are the equivalent of daylight and without them contributors are just stumbling around in the dark. Coverage analysis can help focus data improvement efforts, show progress, and highlight areas where data is excellent. It's particularly illuminating when considering points of interest (POI) data, which is one of the most challenging subsets to populate and maintain.

A purely quantitative approach, such as a total number of records in a country, doesn't really provide much insight here. Before we can measure the coverage of collected data, it's important to predict granular distribution of POIs. We've started to perform such predictive analysis based on OSM road network data, as it has some interesting correlations to POI presence.

Using these prediction, we're building an open-source analysis engine, capable of evaluating a variety of POI datasets and producing coverage metrics. This data allows us to shine a spotlight on any part of the world and clearly see the state of POI data.

In this talk we will dig into our approach for generating predictive data analytics and quality/coverage analysis, and examine how they've helped us see OpenStreetMap POI data in a whole new light.

FRIDAY, OCT. 5 1:00PM | 20 MIN ROOM 310 A

OSM: All Your (Esri Vector) Base Are Belong to Us

R Resources for Mappers

Jessica Acosta Rodriguez
Esri

Last year Esri made composite World Imagery available to all OSM editors and proposed a new feature in iD to incorporate content from our own web services. Since then we haven't rested on our laurels. This spring we released a brand spanking new vector tile basemap with canonical osm cartography. In this talk we'll explain how the effect was achieved using a variety of tools. Since the raw data is distinct from the style we'll also show off how you can quickly customize and deploy a copy of your own.

FRIDAY, OCT. 20 1:30PM | 20 MIN ROOM 310 B

Can We Validate Every Change on OSM?

Q Quality

Manohar Erikipati

Humanitarian OpenStreetMap Team

Preventive measures towards vandalism on OpenStreetMap have long been non-existent, and it takes less than a minute to sign up on OSM with an email address and make an edit — accurate or egregious. With more than 3 million edits a day, data errors introduced into OSM create a substandard map experience to anyone using OSM as a basemap. At Mapbox, hundreds of millions of users view the map everyday, and data quality is crucial to our products.

This talk will focus on the approaches Mapbox has taken over the past years to ensure data quality and what we learned with each iteration. We will talk about the tools we have built, and present a new unit of change for OSM edits that, in terms of volume, is more efficient than using changesets and features. We have taken on the challenge of reviewing every edit on OSM in the shortest time possible while continuously ingesting feature updates. We will also talk about how we are sharing the reviewed data with the community, and how community can benefit from our latest review pipeline.

FRIDAY, OCT. 5 | 10:00AM | 20 MIN

ROOM 310 A

OpenStreetMap as an AWS Public Dataset and it's Uses

R Resources for Mappers

Joe Flasher

Amazon Web Services

OSM has been a part of the AWS Public Dataset Program for a little over a year and I'll share examples of how the data can be used in novel ways when made available in the cloud in formats designed for querying and analysis. But wait, there's more! In addition to looking at usage within the cloud, I'll also share examples of how this can be used in local, disconnected or connection constrained environments, but still taking advantage of cloud concepts. Likely targets for this type of usage would be in disaster response scenarios.

ROOM 310 B

FRIDAY, OCT. 20 | 10:00AM | 20 MIN

Workshop: Traces of the Past: 1812 Detroit

FRIDAY, OCT. 5 | 10:00AM | 20 MIN

ROOM 310 A

Bert de Bruijn

Openstreetmap (OSM) has championed in geographic citizenry data collection for years now. A few months ago we learned at the UN World Data Forum in South Africa about the interest in the OSM geodatabase from National Statistics offices. Besides, many authoritative data agencies around the world are seeing how their shrinking budgets call for a change in their collection processes with the data revolution, asking themselves how to use our data and how to work with our civic tech groups. Following the 2030 agenda, they officially accept that the use of external collaboration can be a great tool to their data collection needs.

We propose a talk inviting UN and Census Officers from US and Canada to show how they could use contributions from our community and other stakeholders, in particular to fill gaps on census coverages and SDG indicators. We will also portray results from the STATS UP project, a program to contribute to bring more allies into the SDG indicators production and census rounds. We'll finally explain how to use the knowledge base of the OSM community (blogs and talk sessions) to learn OSM in the government, producing lessons to collaborate.

Lightning Talks

L Lightning

ROOM 410 B

FRIDAY, OCT. 20 | 1:30AM | 90 MIN

Bike lanes
Jake Sigal

Curb Mapping
Dani Waltersdorfer

iD
Bryan Housel

iD Notes
Thomas Hervey

Open Cities Africa: Open Data for Disaster Risk Management
Nuala Cowan

Using addresses in Africa
Emmor Nile

The Machine Mappers are Coming

Machine Learning

Eric Gunderson

Let's take a look into the future: If maps are increasingly created and interpreted by machines without a human in the loop - does this mean human generated content is becoming obsolete?

Today, algorithms draw building footprints, identify population centers, locate stop signs and lane markings. High precision maps enable pixel perfect superimposition of digital content in AR, and centimeter level localization maps guide autonomous vehicles.

Yet maps continue to address human needs: they allow us to choose a place to eat out and find the best way to walk there. The heart of OpenStreetMap is the human connection to mapping, a community where we capture and discuss human observed data. The map of the future is a complex composite of human and sensor generated data, accelerated by machine learning for efficiency and validation. I'll share our experience at Mapbox building these new pipelines, and open discussion of how to expand this ecosystem while supporting community.

FRIDAY, OCT. 5 2:30PM |90 MIN

ROOM 310 A

OSM at Facebook

Machine Learning

Drishtie Patel

Amazon Web Services

Over the past two years a team at Facebook has been using machine learning algorithms to help human mappers edit and validate faster. In addition to sharing how we use OSM in product, connectivity and disaster response you can learn about how we completed AI-Assisted Road in Thailand. In our next phase we plan to work more on how to identify areas within countries that are not mappers in a more efficient way as well as focus on fixing vandalism and quality. We will talk about the tools we have created to support these efforts, the lessons learned and share our next steps.

ROOM 310 B

FRIDAY, OCT. 20 3:00PM | 20 MIN

Discover Rural America

U US Community

Clifford Snow

The press calls it the “Forgotten America” because of a shortage of everything from doctors to jobs. In 2006 OpenStreetMap imported TIGER roads from the Census Bureau. That single import changed the landscape of the US. The US went from a map desert to one with roads from coast to coast. Since that time roads in urban areas and major roads have gone through an amazing improvement process. In Washington State, one section of Highway 101 is on version 98. Yet in rural America, many roads haven’t been touched since they were imported. OSM’s rural America looks like we imported the data and then forgot about improving it. Which for many areas, that’s exactly what happened.

We will look at the state of roads in rural America, especially the risks they pose, and suggest ways to improve the data.

FRIDAY, OCT. 5 | 4:00PM | 20 MIN

ROOM 310 A

Historical Change Mapping using OSM as a Platform

O OSM/Data History

Matthew A. Hanson

Development Seed

OpenStreetMap has proven to be a great mapping platform, but it’s main goal has always been to create the most recent accurate map. While features are tagged with some date information, there is little effort to align the dates with the actual dates these features are first created, or when they are removed. We wanted to map changes over time to very high accuracy by employing the same approach used by OSM - with high resolution imagery we would map several points in time. But this posed a few challenges - what’s the best way to manage map data from multiple dates, and how do we store the data - we can’t just edit OSM with a bunch of historical information.

So we used our own OSM instance, called osm-seed. First we mapped out our areas of interest in the real OSM so that it contained current information for our regions. Then we identified historical imagery and worked backwards, at each time date deleting, or adding features as needed, until we got back to our earliest date. Finally with our OSM data in hand for multiple dates we were able to calculate statistics over time, such as change road lengths and building footprints.

ROOM 310 B

FRIDAY, OCT. 20 | 10:00AM | 20 MIN

OpenStreetMap Data Analysis Workshop

FRIDAY, OCT. 5 | 4:00PM | 90 MIN

ROOM 410 A

Jennings Anderson and Seth Fitzsimmons
Pacific Atlas

OSM contains an enormous amount of data, even more when one considers the historical footprint produced by 14 years of editing. As a community, we've generally addressed the problem of surfacing it in maps, but there's much more that can be gleaned.

How have particular areas evolved over time (both as mapped and physically developed)? How complete is the map? How have Missing Maps, HOT, and other guided mapping programs influenced it?

There are some roundabout ways to get at these answers, but it's never been particularly clear, comprehensive, or quick. OSMesa is a set of open-source tools that enable us to easily explore OSM to tackle these questions and help us better understand the map and the world around us and to empower the OSM community to tackle ungainly projects in more informed ways.

In this talk, we'll discuss OSMesa's underlying philosophy and technology (Apache Spark, GeoTrellis) and walk through how it's used, including to support the Missing Maps leaderboards and for assessing completeness in African nations. We'll share the vision for the project and elaborate on how this approach to working with OSM data can dramatically expand our ability to ask and answer questions.

Inclusive Pedestrian Mapping: OpenSidewalks, AccessMap, and Accessibility

U US Community

ROOM 310 B

FRIDAY, OCT. 20 | 4:30PM | 20 MIN

Nick Bolten
Pacific Atlas

Safely and predictably navigating pedestrian spaces presents an informational challenge for all kinds of users - whether an area is steep, has sidewalks of a certain width, or raised curbs can make the difference between a successful outing and a late arrival (or even cancelled trip). To compound this, the information pedestrians need to reliably get around is often unavailable: hard to discover, in an inconvenient/insufficient data format, or simply missing. OpenStreetMap is uniquely positioned to be a leader in mapping pedestrian spaces due to its connectivity (pedestrian spaces link POIs and transit), flexible data model, and ability to match (or even co-locate) user needs with mappers. The OpenSidewalks project is focused on collecting this kind of information in OpenStreetMap by developing and promoting mapping standards, hosting mapathons, and creating open source software tools to support mapping efforts to make self-mapping easy and distributed. AccessMap is a free, open source, user-facing web and native mobile application that consumes pedestrian information from OpenStreetMap in order to deliver a deeply examinable pedestrian map and custom-tailored trip planning for individuals with specific mobility requirements, such as avoiding curbs or steep hills.parties.

OSM vs. Blockchain to Tell the Historical Mapping Story

OSM/Data History

FRIDAY, OCT. 5 | 4:30PM | 20 MIN

ROOM 310 B

Jeremy Lechtzin

StreetDeets

Services, applications and tools continue to be developed that map archival data to tell the history of people and places. Some US (and US-adjacent) examples: the trio of OldSF / OldNYC / Old Toronto geocode multiple archival photo sets from those cities to allow a map-based exploration of the imagery. 80s.nyc and Detroit's Black Bottom Street View present block-by-block views using archival photos from one point in time, recreating a street view. The New York Public Library's Space-Time Directory offers tools to geo-reference historical maps and other data like city directories.

All are useful ways to visualize the past, but each is limited by a lack of accessible historical land and street data.

This talk will explore ways in which OSM-based frameworks like Open Historical Map are best suited to solve the geocoding problems involved with demapped streets and renumbered buildings, and how other frameworks like blockchain should be integrated to solve the parcel data problems involved with historical land transfers.

The OpenStreetMap US Camera Lending Program

OSM/Data History

FRIDAY, OCT. 20 | 5:00PM | 20 MIN

ROOM 310 B

Martijn van Exel

OpenStreetMap US

Since launching Scout in the US in 2013, the Telenav OSM effort has scaled up to include a team of 30 mappers, 30+ developers and a technology stack that brings OSM not only to mobile devices, but also to a growing number of cars in the US as part of our Scout collaboration with Toyota. Next, we are bringing OSM to cars in Canada. To make this happen, we spent six months growing our team, mapping a lot, and building new technology. In this talk, we will talk about how we scaled up our mapping effort so we could help the OSM community make OSM 'car ready'. We will talk about how we worked with the community, mistakes we made, lessons we learned, data we discovered, and how OpenStreetCam was essential to our success. Speaking of which, we will also have some interesting OpenStreetCam news to share!

SharedStreets: Making Streets Interoperable

OSM/Data History

Kevin Webb

SharedStreets

Cities face major challenges managing the proliferation of new transportation technologies and services competing for street space. Each new service brings with it new kinds of data and, often a new representation of the street itself. Making sense of what's happening requires connecting data that crosses public-private boundaries department lines. SharedStreets is a non-profit initiative collaborating with public and private sector innovators on open source tools, data standards and data infrastructure that allow communities to rethink how they manage street-linked information, automating the connection between public GIS systems, privately managed data and OpenStreetMap. This talk will explore how cities and new transport services are using SharedStreets to collect and aggregate and share dynamic layers of information about the street, ranging from traffic speeds, driver behavior, to parking availability.

FRIDAY, OCT. 5 | 10:00AM | 20 MIN

ROOM 310 A

Neema Meremo Samuel

Keynote: Mapping to End FGM and the Role of Female Mappers

Neema Meremo holds a Bachelor of Science in Human Resource Management from Moi University. Passionate about human rights, especially girls' rights with a history of working

with NGOs that work to eradicate #FGM & child marriage. Currently working with Hope for girls and women Tanzania an NGO that shelters girls who are being forced to undergo FGM and also a volunteer at Crowd2Map Tanzania as a lead community mapper(Mapping to end FGM). She is also passionate about economic empowerment of the youth who are the nation's largest population through various economic activities.

ROOM 310 A

SATURDAY, OCT. | 90:00AM | 20 MIN

Filling in the Gaps with the Mapillary API

S Street Level Intelligence

Christopher Beddow
Mapillary

Pic4Review is an open source tool that relies on user-contributed street-level imagery from sources such as Mapillary and OpenStreetCam to verify, enhance, and create OpenStreetMap data. Users can create or join various missions, such as indicating wheelchair accessibility or confirming recycling container locations. Mapillary computer vision also opens new possibilities, as users can be directed to areas where data missing from OSM can be derived from images.

OSM in World Bank Operations: Analyzing Green Space in Tbilisi, Georgia

I International Use

Charles Fox
The World Bank

The World Bank is increasingly using OSM in its spatial analysis to support operational decision making. A great example is a recent dialogue the World Bank has had with the municipal government of Tbilisi, Georgia. The Geospatial Operations Support Team made extensive use of OSM data and derivative services to support dialogue with the government:

1.) We used OSRM to identify and map the under-served population - those whose access to green space is currently poor;

2.) We worked with Global Green City Watch to deploy a machine learning model to interpret park land cover types. Their algorithm ranked Tbilisi's parks on a range of environmental, social and economic measures.

Though dialogue is still ongoing, the mayor recently announced that the city will be investing in four new parks, some in areas that our models predicted would benefit greatly from more green space.

Finally, if there is time, I'd like to cap the presentation by talking about other ways the Bank is interacting with / using OSM (delivering OSM training / community building with TeachOSM, mapathons, and Rural Accessibility Index approximation).

OpenStreetCam Is Now An Open Machine Learning Platform for OpenStreetMap

S Street Level Intelligence

Adrian Margin
Telenav

In this talk, Telenav's lead AI engineer Adrian will take you on a road trip. The starting point is 150 million OpenStreetCam images contributed by mappers and drivers across the globe. On the way, we will make stops at every point of technological interest. We will show how street level images are assessed and segmented, how salient features are extracted, and how these features are compared with existing OSM data. At the end of the journey, we offer improvements to the OSM map, ready to be validated and applied by human mappers.

We can show you all this in great detail, because the AI parts of the OpenStreetCam stack are now open source, and we want the OpenStreetMap community to improve and extend it, to make OpenStreetCam more valuable for everyone. To jumpstart this, we organized a competition inviting improvements to the stack earlier this year. To conclude the talk, we will share the results of this competition, and our plans for expanding the types of features we can detect.

OSM for Disaster Management: City Wide Mapping Project (Jakarta,Surabaya and Semarang)

I International Use

Harry Mahardhika Machmud
Mapbox

Emily Jacobi, Executive Director & Founder, is passionate about leveraging technology to empower marginalized communities. Beginning her career as a youth journalist at the age of 13, she has led technology, media and research projects in Latin America, West Africa, Southeast Asia and the US. Prior to founding Digital Democracy, she worked for Internews Network, AllAfrica.com and as Assistant Bureau Director for Y-Press.

Emily has presented on the intersection of technology, civic engagement and human rights to US Congress, the State Department, the United Nations, and numerous universities and technology conferences. Devoted to protecting the environment and democratizing the design process, at Digital Democracy Emily works with the staff and board, oversees strategic planning and development and works directly with grassroots partners to design programs and tools that empower marginalized communities to defend their rights.

MapRules: Custom Tagging Presets & Validation Rules

W Mapping the World

Max Grossman and Clarisse Abalos
Radiant Solutions

Answering the question, “What should I tag this feature?”, is one of the most important and at times irreconcilable problems faced by OSM mappers.

Whether it manifests through the ‘building=yes’ phenomenon, colorful correspondences between OSM contributors about best tagging practices, or the many community-driven efforts and software tools made to validate problematic feature tagging, this grey area is pervasive and has consequences.

MapRules, an API service and web interface for creating and sharing reusable presets and validation rules, hopes to solve these problems. It simplifies OSM’s tagging conundrum, reduces the barrier to entry for new mappers, promotes mappers to actively self-validate their work, and hopefully can be a happy medium between OSM’s conventional tagging schema and something more standardized.

This talk will detail identified pain points that motivate MapRules, how the tool works under the hood, and of course a live demonstration!

SATURDAY, OCT. 6 | 11:00AM | 20 MIN

ROOM 310 A

Connecting Educators to OSM Community Members & Vice Versa: A Discussion

E Education

Celeste Reynolds
Mashpee (MA) High School

Hear from educators integrating OSM contribution into their classroom, TeachOSM contributors and other community members working with educators. With the common goal of growing the community at an earlier age, suggestions and lessons learned from community member-educator arrangements will be discussed.

ROOM 310 B

FRIDAY, OCT. 20 | 10:00AM | 20 MIN

Introduction to R + OSM

ROOM 410 AB

SATURDAY, OCT. 6

11:00AM | 60 MIN

Angela Li

Learn to import, visualize, and analyze OSM data using the open-source programming language R. In this workshop, you will learn the basics of R and RStudio, as well as the osmdata and osmplotr packages. This workshop will introduce you to working programmatically with OSM data and is geared toward those who are new to R. (Downloading and installing R and RStudio prior to the workshop is encouraged, though not required.)

United States Destination Tags

ROOM 310 A

SATURDAY, OCT. 6

11:30AM | 20 MIN

S Street Level Intelligence

David Koons

Kaart

Interstate highways are the highest classification of road data within OSM in the United States. Confidence in the accuracy of this data is critical to a functional map. In March 2018, Kaart began an effort to verify and improve highway destination tags across the nation. To date, Kaart has verified destination tags in more than 10 states, verifying more than 5,100 road segments. Our goal is to create comprehensive and complete data for all 50 states. Using publicly available tools and imagery, we would like to share our general findings as well as strategies in hopes to improve upon our methodology and further progress toward our goal.

Connecting Educators to OSM Community Members & Vice Versa: A Discussion

E Education

Derek Sheets

Stranahan High School- Broward County Public Schools

Hear from educators integrating OSM contribution into their classroom, TeachOSM contributors and other community members working with educators. With the common goal of growing the community at an earlier age, suggestions and lessons learned from community member-educator arrangements will be discussed.

SATURDAY, OCT. 6 | 11:30AM | 20 MIN

ROOM 310 A

Microgrants to OSM Communities: What Worked, What Didn't

G Global Community

Rebecca Firth

In 2017, HOT launched a small grants program called "Microgrants" with the goal of supporting small scale, big impact projects conceived and carried out by OSM communities. In 2018, we distributed a second round of grants, supporting a total of more than 30 local communities. This talk will review what we did, what worked, and what didn't. Speakers will include all microgrant recipients traveling to Detroit on a SoTM scholarship. Participants will hear directly from grantees as to their perceptions of the program and we'll discuss with the audience what direction we should take going forward. The objective of the session is to explore with the broader OSM community how we can make the program more effective and beneficial to additional areas of our community we haven't yet reached as well as complement efforts led by our partners at OSMF and potentially OSM US.

ROOM 310 B

SATURDAY, OCT. 6 | 1:00PM | 20 MIN

Building AI-Assisted Mapping Tools: Progress and Lessons Learned

M Machine Learning

Drew Bollinger
Development Seed

The use of AI to analyze Earth observation imagery is growing, but there remain some difficult questions about how this trend will affect OpenStreetMap and its users. At Development Seed, our aim is to develop "AI-Assist" tools that will empower existing mappers rather than replace them. In the last year, we've started building the AI-Assist toolbox that we proposed at SotMUS 2017. Our presentation will focus on a new plugin for the Humanitarian OpenStreetMap Team's Tasking Manager, which uses AI to help mappers visualize where infrastructure is most under-mapped. The tool works by autonomously detecting building and road infrastructure from satellite imagery, subtracting the known infrastructure stored in OpenStreetMap, and presenting the difference to mappers to help prioritize their efforts. Our presentation will also cover the lessons we learned when putting these AI-powered tools in the hands of real mappers. We believe that AI can significantly improve OpenStreetMap, but we must be mindful of this technology's limitations as it is integrated into the mapping community.

SATURDAY, OCT. 6 1:00PM | 20 MIN

ROOM 310 A

Workshop: Getting Started with OpenStreetMap for Educators

Shawn Goulet, Maggie Cawley, Richard Hinton, Steven Johnson

With increasing opportunities for students to map on behalf of civic impact and humanitarian organizations, digital mapping technologies are being adopted by more educators to teach spatial concepts. This workshop puts the basic OpenStreetMap editing techniques into the hands of teachers with a special emphasis on the needs of classroom. Bring a laptop and mouse. At the end of this workshop you should be able to

- Convey to your students the purpose behind mapping
- Add basic features to OpenStreetMap
- Contribute to existing mapping projects through HOT, MissingMaps, TeachOSM and others

ROOM 410 AB

SATURDAY, OCT. 6 1:00PM | 90 MIN

Climate Change Impact Assessments with OpenStreetMap

G Global Community

Ethan Nelson
NASA Jet Propulsion Laboratory

Changing climate, sea level rise, and adaptations are some of the biggest problems the planet may face in the coming years. Understanding the effects of these problems on settlements, structures, and infrastructure is important to communicating their magnitude and potential impacts as well as effectively preparing for their effects. OpenStreetMap provides an opportunity for informing both qualitatively and quantitatively at a localized level while offering near global coverage at the intersection of science-based estimates and the risk to life and property—particularly in locations that are systematically under-served by building surveys, population counts, or other socioeconomic information collection. Here I will present work exploring the use of OpenStreetMap in assessing potential impacts based on scientific model estimates of changing atmospheric and oceanic environments using open-source toolchains in the OpenStreetMap ecosystem.

SATURDAY, OCT. 6 1:30PM | 20 MIN

ROOM 310 A

Analytic Support for Contributors: Defining Levels of Automation for Machine Learning Applied to Crowdsourced Mapping

M Machine Learning

Ryan Lewis
In-Q-Tel CosmiQ Works / SpaceNet

Significant advances in machine learning techniques for image classification, object detection and image segmentation have profound implications for crowdsourced mapping applications. Recent open source initiatives such as SpaceNet have strived to direct more research and development towards specific foundational mapping functions such as building detection and road network and routing identification. As these machine learning techniques mature, mapping contributors need to understand and engage the research community to help structure the application of these new techniques against a diverse of mapping challenges. Yet, currently, it is difficult translate mapping requirements to machine learning evaluation metrics, and vice versa. This presentation will discuss a proposed framework for defining levels of analyst augmentation that will allow mapping contributors and machine learning researchers to better understand each other and help direct the application of these advanced algorithms against mapping problems. Specifically, it will focus on relevant use case of mapping requirements, before, during and after a natural disaster and demonstrate a framework to understand what capabilities are nearing readiness.

ROOM 310 B

SATURDAY, OCT. 6 1:30PM | 20 MIN

Raising and Growing Passionate OpenStreetMap Humanitarian Mappers Using Social Media and Gamification Techniques: Examples from Nigeria

G Global Community

Victor N. Sunday & Odeam Valerie Osuampke
University of Port Harcourt

Mapillary is a powerful tool for proliferation of data. OpenStreetMap relies on a community of editors who are capable of using ground truthing, satellite imagery, and street-level imagery to build the world's best map. However, the volume and speed of edits is limited to how much data a human editor can manually track down and annotate.

Mapillary multiplies the potential of any individual or group to contribute to OpenStreetMap by allowing vast areas to be captured in street-level imagery then converted to detailed and comprehensive map data.

Every OSM editor can be empowered by Mapillary to make more map data available to themselves and others across the globe. This session will walk through the map data being created with our computer vision capabilities and how this and other data can be accessed in the latest API.

Semi-Automated Map Editing

M Machine Learning

Favyen Bastani
MIT CSAIL

Tracing roads by hand is slow, and automation has the potential to greatly accelerate the process of mapping roads. That said, although there has been two decades of research in automatic map inference, these systems have not gained traction. Fundamentally, high error rates in these systems make full automation impractical. We instead consider machine-assisted map editing, where automatic map inference is integrated with existing, human-centric map editing workflows. To realize this, we built Machine-Assisted iD, where we extended the web-based iD editor with machine-assistance features. These features enable users to efficiently validate automatically inferred roads in an interactive workflow. We designed the system to tackle the addition of major, arterial roads in regions where existing maps have poor coverage, and the incremental improvement of coverage in regions where major roads are already mapped.

Lightning Talks

L Lightning

When Seeing Isn't Solving
Jerry Paffendorf

Visualize Change
Tyler Radford

Planet Data
Michelle Steigerwalt

Small Footprint Vector Maps for "Internet In a Box"
George Hunt

Building links between AGS and OSM
Josh Campbell

OSM Counts
Minh Nguyen

SATURDAY, OCT. 6 | 2:30PM | 20 MIN

ROOM 310 A

Workshhop: Creating Superlative Classroom Mapping Projects

Shawn Goulet, Celeste Reynolds, Maggie Cawley, Richard Hinton, Steven Johnson

We'd like experienced mappers to join educators to explore what makes a successful mapping project and how to help put it in class. To successfully integrate open mapping in the class, teachers need multiple ways to meet the OpenStreetMap project so that both map and teachers/students benefit. In this workshop, we'll show how to use the Tasking Manager to find and create compelling mapping projects. Experienced mappers will learn how to support open mapping in their local schools. Educators will learn how to use the Tasking to augment their geography lessons. At the end of this workshop you should be able to

- Understand the needs of teachers and how you can assist classroom mapping
- Learn how to use the Tasking Manager to access mapping projects
- Find and map from existing projects on the HOT Tasking Manager
- Create and publish your own projects on the TeachOSM Tasking Manager

ROOM 310 B

SATURDAY, OCT. 6 | 2:30PM | 90 MIN

Why Geocoding is Hard and How You and OSM Can Help

Y Geocoding

Julian Simioni
geocode.earth

Steve Coast recently called geocoding one of the last unsolved technical problems of OSM.

While it's true there's always more work to do, real progress has also been made, and our community is uniquely suited to continuing to improve the state of open-data geocoding.

In this talk we'll explore both sides of the geocoding challenge:

- Why geocoding is a vast and difficult task
- Where OSM shines as a data source for geocoding
- How you, the OSM contributor can best make OSM better for geocoding

SATURDAY, OCT. 6 3:00PM | 20 MIN

ROOM 310 A

The Map Quality Measurement Initiative: A Heat-map Approach to Visualize Gaps in Map Quality

Q Quality

Muning Brandeis
Critigen

OpenStreetMap (OSM) data quality is a concern when compared to propriety data. Inspired by other OSM projects, the Map Quality Measurement initiative intends to visualize map quality with a heat-map approach by summarizing map error indicators within relevant grids. We are not simply indicating areas that are missing map quality, we are providing insight for prioritization by overlapping social-economic metrics (e.g., population density, road density, etc.) to enable people-first decision-making when deciding where to improve map quality. The Map Quality Measure (MQM) is a heat-map style representation showing the map quality. To make MQM informative, the size and value of each grid used to summarize quality is sensitive to local context. Our project is developing an automated process to find the optimal grid size and update in response to an update trigger on demand. As to quality indicators, our project provides several examples to illustrate the high-level workflow, so methods can be replicated by others in the OSM Community. Last, we plan to create an interface for community members to contribute and share their map quality indicators. As a collaborative effort going forward, MQM can work in concert with other community initiatives and inform on where to contribute efforts.

ROOM 310 A

SATURDAY, OCT. 6 4:00PM | 20 MIN

Map Matching when the Map is Wrong

T Tech for Transportation

James Murphy
Lyft

Map matching is a key part of many GIS applications, linking observed GPS traces to road networks via a map, and allowing inference both of more accurate trajectories and of properties of the road network. But when the map contains errors such as missing or mislabeled roads, map matching can give poor or even misleading results. We show how existing map matching algorithms can be extended to make them robust to map errors and omissions, and discuss how such algorithms can be used to identify map problems such as missing roads, unmapped drivable areas (e.g. parking lots) and mis-directed one way streets.

SATURDAY, OCT. 6 | 4:00PM | 20 MIN

ROOM 310 A

Workshop: Make Your Own Custom Heatmap with OpenStreetMap data and Mapbox

Minh Nguyen

Creating customized, interactive web maps has never been easier. In this workshop, we will explore how you can use the Mapbox map design essentials – including Cartogram, Studio, and GL JS – to tell your story with a heatmap. With OpenStreetMap features available directly in Studio, you can create density visualizations using current OSM data – or your own! Come with an idea, leave with a beautiful map and visualization that's uniquely your's. Open to new cartographers and advanced users alike.

ROOM 410 AB

SATURDAY, OCT. 6 | 4:00PM | 90 MIN

Urchn Tells you Where Cities Change, and Where OSM is Out-of-Date

Q Quality

Derek Lieu
Development Seed

Urchn is like your friend who's lived in the city forever. It's a tool that uses persistent change monitoring to tell us where cities are changing, and where OSM is out of date. For planners and civil servants, it provides a building-by-building view on how neighborhoods develop. Above all, it's a tool for mappers, and mapping campaign organizers, who need to know where they can make the most impact.

To power Urchn, we run consecutive overhead earth imagery passes through a machine recognition algorithm. This process filters out things like seasonal variation, and gives us outlines of newly paved roads, fresh building construction, and other persistent change. By overlaying this data over high-res imagery and analyzing it against a minutely updating OSM replication, we can detect in fine detail where a city has changed, and where that change requires a mapper's attention.

When dense urban areas change faster than OSM volunteers can map, the result is a less useful map for everyone. We're working with Radiant and Azavea to give mappers the tools to keep up with urban change. Urchn will be public soon, and we'd love to get the community's feedback.

SATURDAY, OCT. 6 4:30PM | 20 MIN
ROOM 310 A

Maps For All Maneuvers

T Tech for Transportation

Yuanyuan Pao
Lyft

Map matching is a key part of many GIS applications, linking observed GPS traces to road networks via a map, and allowing inference both of more accurate trajectories and of properties of the road network. But when the map contains errors such as missing or mislabeled roads, map matching can give poor or even misleading results. We show how existing map matching algorithms can be extended to make them robust to map errors and omissions, and discuss how such algorithms can be used to identify map problems such as missing roads, unmapped drivable areas (e.g. parking lots) and mis-directed one way streets.

ROOM 310 B
SATURDAY, OCT. 6 4:30PM | 20 MIN

Kaart's Quality Checks to Improve Road Data and Routing

Q Quality

Ian Malott
KaartI

We analyzed thousands of satellite images to automatically identify buildings missing from OpenStreetMap. Using European Space Agency's Sentinel-2 imagery from Astro Digital, we analyzed the images to first identify objects that look like buildings then we overlay these suspects on OSM buildings layer to find candidates for buildings that are not labeled in OSM. With an up to date, global imagery source, this approach could help keep OSM updated by adding new buildings as they appear and flagging buildings that are no longer there.

SATURDAY, OCT. 6 5:00PM | 20 MIN

ROOM 310 A

OSM in UrbanFootprint: Combining Walk Network with Transit Schedule Data for Non-auto-based Accessibility Measures

T Tech for Transportation

Kuan Butts
UrbanFootprint

The collective mission of mapping the world is never complete without street addresses. Crisis response as well as longer term rehabilitation requires up-to-date maps including street names and house numbers to geocode physical locations. We describe how to enhance crowdsourced OSM road geometries by generating automatic addresses so that aid agencies and locals can better coordinate location-specific services. For example after a crisis, OSM mapathon community remotely creates road vectors. While the actual naming may take longer, an algorithmically generated scheme provides a common framework to start immediate coordination.

Our system processes OSM road vectors and outputs temporary labels for streets and houses in any unmapped area with missing labels. Our generative algorithm creates hierarchical and linear street addresses (Robocodes), by labeling regions, roads, and blocks; based on addressing schemes around the world and coherent with human cognitive system. For the algorithmic details, we invite the audience to check our award winning CVPR EarthVision paper (at robocode.info). In this talk, we will share and demonstrate improved maps on ID-tool, compare them to current open and industrial solutions, and walk through our opensource code to generate Robocodes for any given OSM bounding box.

ROOM 310 B

SATURDAY, OCT. 6 5:00PM | 20 MIN

SUNDAY, OCT. 7 | 9:30AM | 20 MIN | ROOM 310 A

Applying Big Data tools and Techniques to OpenStreetMap with OSMesa

B Big Data

Seth Fitzsimmons
Pacific Atlas

OSM contains an enormous amount of data, even more when one considers the historical footprint produced by 14 years of editing. As a community, we've generally addressed the problem of surfacing it in maps, but there's much more that can be gleaned.

How have particular areas evolved over time (both as mapped and physically developed)? How complete is the map? How have Missing Maps, HOT, and other guided mapping programs influenced it?

There are some roundabout ways to get at these answers, but it's never been particularly clear, comprehensive, or quick. OSMesa is a set of open-source tools that enable us to easily explore OSM to tackle these questions and help us better understand the map and the world around us and to empower the OSM community to tackle ungainly projects in more informed ways.

In this talk, we'll discuss OSMesa's underlying philosophy and technology (Apache Spark, GeoTrellis) and walk through how it's used, including to support the Missing Maps leaderboards and for assessing completeness in African nations. We'll share the vision for the project and elaborate on how this approach to working with OSM data can dramatically expand our ability to ask and answer questions.

OSM and Land Use Planning - City-Scale Scenario Development for the Future of Cities

P OSM in Geography and Planning

Jamie Alessio
UrbanFootprint

Land use and transportation planning are key drivers in the livability and sustainability of cities of the future. UrbanFootprint helps city planners explore broad questions like "Where will the next 25,000 residents live, work, and shop? How will they travel between these places?" And importantly, "What are the comparative impacts of different visions of the future?"

To achieve this goal, UrbanFootprint provides city planners and stakeholders with OpenStreetMap-powered analyses which surface information such as walk accessibility to parks, schools, employment, and commerce. In addition, regional management metrics such as the number of miles each added resident will typically travel by car, transit, bike, and walk are calculated.

OSM provides the foundational network graph for exploring connectivity of the built environment, providing unprecedented access to previously cost-prohibitive analyses in the field of land use and transportation planning.

SUNDAY, OCT. 7 | 9:30AM | 20 MIN | ROOM 310 B

OSMnx: Visualization and Analysis of OpenStreetMap Networks in Python

B Big Data

Geoff Boeing
Northeastern University

Street networks underlie city circulation and human dynamics, but it has historically been challenging for urban researchers to acquire and consistently analyze high-quality street network data. OpenStreetMap shifts this paradigm with its trove of worldwide data. This talk presents OSMnx, a Python package to make the collection of data and the creation and analysis of street network models easy, consistent, and automatable for any study site in the world. It demonstrates 1) the tailored and automated downloading and construction of street networks from OpenStreetMap; 2) the algorithmic cleaning and simplification of network topology; 3) the acquisition of network elevation/grade data and building footprints; and 4) the ability to analyze street networks, calculate routes, project and visualize networks, and calculate geometric and topological measures. These measures include those common in urban design and transportation studies, as well as advanced measures of the structure, topology, resilience, and sustainability of the network. Finally, it presents preliminary research that examines 27,000 street networks at various scales across the US, including every American city/town, urbanized area, and Zillow-defined neighborhood.

SUNDAY, OCT. 7 10:00AM | 20 MIN

ROOM 310 A

Pic4Review: Mapping with Street-level Imagery

P OSM in Geography and Planning

Christopher Beddow

Pic4Review is an open source tool that relies on user-contributed street-level imagery from sources such as Mapillary and OpenStreetCam to verify, enhance, and create OpenStreetMap data. Users can create or join various missions, such as indicating wheelchair accessibility or confirming recycling container locations. Mapillary computer vision also opens new possibilities, as users can be directed to areas where data missing from OSM can be derived from images.

ROOM 310 B

SUNDAY, OCT. 7 10:00AM | 20 MIN

Generate Real 3D Worlds for Automotive Simulation & Training in 20 Minutes or Less

X Tech

Miroslav Lysyuk

Goal

Introduce new cartographers and advanced users alike to Mapbox's 3D city and terrain generation tools using the Maps for Unity SDK.

Summary

See how you can instantly generate and customize real 3D worlds & terrain for various automotive use cases using the Mapbox Maps SDK for Unity.

Description

You can now create real, detailed models of any city in the world using the Mapbox Maps SDK for Unity. In as little as 20 minutes, we'll show you how to generate a 3D city using OpenStreetMap data, incorporate real time traffic information, and setup a simulation for use cases like HCI research and autonomous vehicle training. Open to new cartographers and unity users as well as advanced users.

SUNDAY, OCT. 7 11:00AM | 20 MIN

ROOM 310 A

Lightning Talks

L Lightning

FOAM
Alyssa Wright

Future Transportation
Miriam Gonzalez

Transit Coverage
Simon Shapiro

Road Data Collection in Laos
Holly Krambeck

HOT Data
Dale Kunce

ROOM 310 B

SUNDAY, OCT. 7 11:00AM | 60 MIN

Breaking Down Silos: OSM and Esri Side by Side

X Tech

Steve Moore
Esri

OpenStreetMap has long been a great source of global geospatial data, but it has frequently been a challenge to mash up and analyze OSM data using Esri technology. This talk will highlight recent Esri projects that aim to make working with OSM data a much more seamless experience. We've been brewing up several new tools for our own Esri users as well as for the OSM community at large. One of our main goals is to provide value to volunteers coordinating work with agency staff during disaster relief efforts and open up the door to new spatial analyses all year round.

During this talk we'll dive into recent contributions to iD and ongoing collaboration on a new feature to help users hand-pluck high quality content from existing data services into OSM's most popular editor. We'll also explore new Esri-hosted services that mirror OSM in real time, and support dynamic and tiled data access in ArcGIS Online and for all Esri customers.

SUNDAY, OCT. 7 | 11:30AM | 20 MIN

ROOM 310 A

Notes

Notes

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AI-Assisted Road Tracing validated by editors to increase road coverage in OpenStreetMap

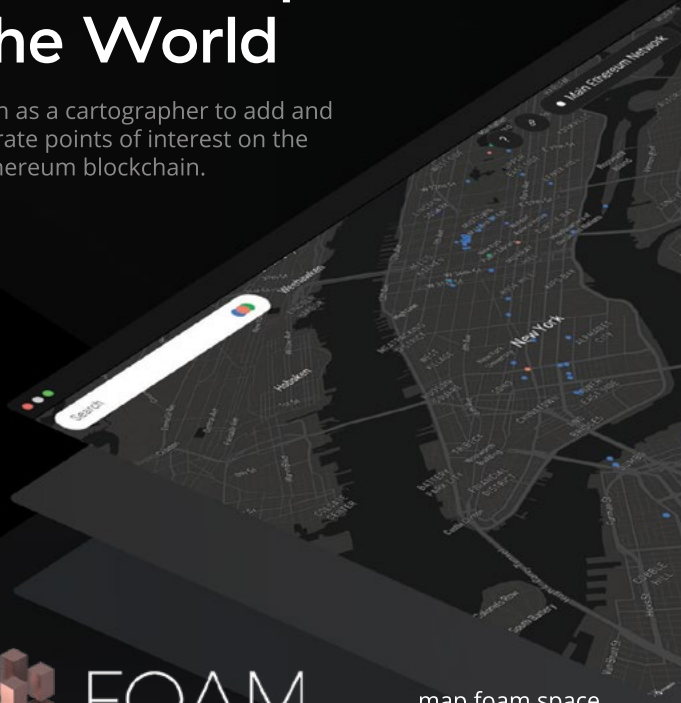
facebook

Did you know?

Facebook uses OpenStreetMap in a variety of products including places, pages and checkins.

The Consensus Driven Map of the World

Join as a cartographer to add and curate points of interest on the Ethereum blockchain.



FOAM

map.foam.space

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Our conference is dedicated to providing a harassment-free conference experience for everyone, regardless of gender, gender identity and expression, age, sexual orientation, disability, physical appearance, body size, race, ethnicity, religion (or lack thereof), or technology choices.

We do not tolerate harassment of conference participants in any form. Sexual language and imagery is not appropriate for any conference venue, including talks, workshops, parties, Twitter and other online media.

Conference participants violating these rules may be sanctioned or expelled from the conference without a refund at the discretion of the conference organizers.

Call or text (202)838-5609 with questions or concerns or to make a report. You can also approach our Code of Conduct Response Team directly (they are in the yellow or pink SOTM-US shirts).

Code of Conduct Response Team

Bryan Housel
Ian Dees
Jessica McInchak
Jonah Adkins
Kate Chapman
Martijn van Exel
Matt Hampel

Special Thanks

OpenStreetMap US Board

Alyssa Wright
Bryan Housel
Ian Dees
Jonah Adkins
Maggie Cawley

State of the Map US 2018 Planning Committee

Andrew Wiseman
Dexter Slusarski
Jessica McInchak
Kate Chapman
Mark Scalf
Martijn van Exel
Matt Hampel
Mikel Maron
Steven Johnson

Thank you to everyone else who helped bring the conference to Detroit and contributed to its success.

OpenStreetMap US

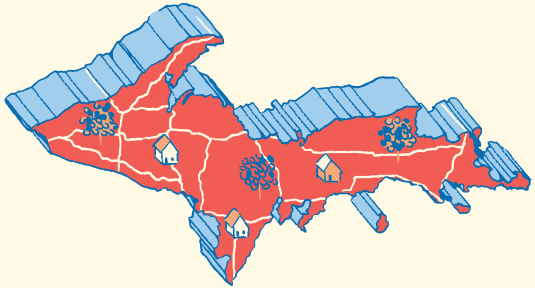
OpenStreetMap is created by people like you.

OpenStreetMap US helps grow and support OpenStreetMap in the United States by connecting and convening community. We run the annual State of the Map US conference, quarterly community events, help individuals and organizations get started with OpenStreetMap and serve as a channel for sharing news about OpenStreetMap. You can help by getting involved.

Visit openstreetmap.us for news, information on local events and resources on how to build up your local OpenStreetMap community.

Join our chapter, support the project and stay up to date.

Follow @openstreetmapus to stay in touch



Schedule subject to change visit
2018.stateofthemap.us
for current schedule

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