Location Powers: Data Science

Nov 13&14, 2019

Google, Mountain View, CA USA

OGC®

Location Powers - Summit Series

- Brings together industry, research, government experts from globe communities
- For interactive discussions that assess location technologies and applications
- To recommend technology innovation, standards development and applications with beneficial outcomes

Location Powers summits are organized by the Open Geospatial Consortium:
Using location, we connect people, communities, technology and decision making to create a sustainable future for us, our kids and future generations

Communities:
Tech & Domain

Partnerships
& Alliances

Process for Standards
& Innovation

OGC®

LP_DS Organizing Committee

- **Ed Parsons**
  - Google's Geographer
- **Patrick Griffiths**
  - European Space Agency
- **Don Sullivan**
  - NASA
- **Caroline Bellamy**
  - Ordnance Survey
- **Roy Rathbun**
  - NGA
- **Kyoung-Sook Kim**
  - AIST

- **Tracey Birch**
  - SOFWERX
- **Shaowen Wang**
  - UIUC
- **Kumar Navular**
  - Maxar
- **Adam Martin**
  - Esri
- **Joe Francica**
  - Pitney Bowes
- **George Percivall**
  - OGC

OGC®

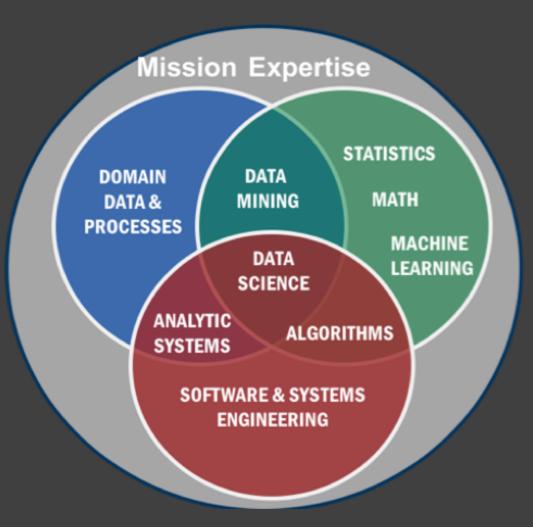# Location Powers: Data Science

Explosive availability of data about nearly every aspect of human activity along with revolutionary advances in computing technologies

- Shift from data-scarce to data-rich environment comes from mobile devices, remote sensing and the Internet of Things
- Innovations in cloud computing and big data provides methods to perform data analytics at exceedingly large scale and speed
- Nearly all of this data has components of location and time

Golden Age of Geospatial Data Science

OGC®

Location Powers: Data Science

Data Science – source NIST

OGC®

LP_DS Sessions

Wednesday, November 13

Session 1: Foundations

- Data abundance, big data analytics, Location enabled

Session 2: Analytics and Representations

- Mathematical methods, computer algorithms and data structures

Session 3: Ripe Trends: AI/ML

- AI, Machine learning

Reception

Thursday, November 14

Session 4: Outcomes/Applications

- How can geospatial data science make a difference?

Session 5: Actions to Take

- What should organizations do to advance geospatial data science and its outcomes?

Summary: Rapporteur Reports

OGC®

Session 1: Foundations

- Moderator: Ed Parsons, Google

- Rapporteur: George Percivall, OGC

- Marc Armstrong - Presentation:
  – Fundamental Issues in Geospatial Data Science: Emerging Trends in Data & Analytics
- Nils Lahr - Presentation:
  – Scaling machine learning to handle visual data will result in more powerful AI

- Panel on Foundations/Motivations :
  – Kathleen Stewart, UMCP/CGIS - New opportunities through big mobility data analytics
  – Anand Padmanabhan, University of Illinois
  – Mark Korver, AWS
  – Jayant Sharma, Oracle

OGC®

Session 2: Analytics and Representations

- Moderator: Kumar Navulur, Maxar

- Annie Burgess, ESIP Federation

- Yolanda Gill presentation:
  - Knowledge-Powered Data Science for Integrated Modeling in Geosciences
- Panel on Analytics
  - Todd Mostak, OmniSci
  - Lauren Bennett, Esri - Perspective: Spatial data science moves from the avant garde to the mainstream
  - Robert Hijmans, UC Davis R-Spatial
  - Keith Hare, JTC 1 SQL/GQL convenor - Perspective: Analytics And Representations in SQL and GQL

- Discussion Group on Analytics

OGC®

- Moderator: Jay Theodore, CTO, Enterprise Technologies, Esri
- Rapporteur: K. Kim, AIST and GeoAI DWG chair

- Philippe Cases presentation: The AI Tsunami

- Panel on Ripe Trends :
  – Anand Kannan, Pitney Bowes - Perspective: Data science, an interdisciplinary approach
  – Milind Naphade, CTO, Metropolis – NVIDIA
  – Devaki Raj, CrowdAI
  – Jim Stokes, MAXAR

OGC®

- Moderator: Jeremy Morley, Ordnance Survey UK

- Rapporteur: Ajay Gupta, chair of OGC Health WG

- Wendy Martinez Presentation: Integration of Geospatial Data: Examples and Implications

- Panel on Outcomes :
  - Regan Smyth, NatureServe - Perspective: The Age of Precision Conservation: Applying AI and Collaborative Science to Prevent Species Extinctions
  - Megan Furman, Defense Digital Service, OSD
  - Steven Ward, The Climate Corporation
  - Edward Strocko, USDOT Bureau of Transportation Statistics

- Discussion Groups on Outcomes

OGC®

- Moderator: Nadine Alameh, OGC
- Rapporteur: Adam Martin, Esri

- Satoshi Sekiguchi, Presentation:
  – When HPC met AI - Next generation of Geospatial Intelligence powered by the ABCI
- Andy Brooks presentation:
  – Designing the Future of Data Science
- Panel on Actions
  – Patrick Griffiths, ESA - Perspective: Earth Observation data and analytics supporting policy and geospatial industries
  – Jeanne Holm, City of Los Angeles - Perspective: Building a Generation of Government Data Scientists
  – Stephanie Shipp, U. of Virginia - Perspective: Harnessing the Power of Data to Support Community Health and Well-Being
- Discussion Groups on Actions

OGC®