Siddharth Gupta

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WORK

- **Apple Inc.** Cupertino, CA
  Senior Software Engineer *Dec 2016 - present*
  - Oct 2020- Jan 2021 onwards Built a Python based research framework and data API layer for researching traffic algorithms now being used full time by 4 data scientists/ML engineers
  - July-Oct 2020- Lead an effort to address major navigation errors due to updates to traffic network such as new road and multimodal traffic flow
  - Jan-July 2020- project lead to introduce several concepts of traffic flow theory traffic and route prediction algorithms
  - 2019- Lead an effort for vendor-independence for traffic data in over 150 countries. This involved increasing pipeline and algorithm performance by 10x, reducing model/artifact size by 80% while increasing accuracy by 10%
  - 2018- Built new evaluation and proactive monitoring techniques to detect emergent traffic patterns and improve stability of production workflows
  - 2017- Worked on a broad range of projects (removing noise from probe data, map matching, pipeline design for computing travel time information etc.) foundational to a traffic service
  - Co-supervised two interns and helped them achieve their goals by arranging regular check-ins, assisting in planning and code reviews

EDUCATION

- **Massachusetts Institute of Technology** Boston, USA
  MS: Interdisciplinary Transportation Engineering *Aug 2015 - Dec 2016*
  - 100% financial aid, Chair of the Transportation Student Group
  - Research Assistant at the Human Mobility and Networks Lab. Publications:
    * TimeGeo: modeling urban mobility without travel surveys, *S. Jiang, Y. Yang, S. Gupta, D.Veneziano, S. Athavale, M. Gonzalez, Proceedings of the National Academy of Sciences, 2017*
    * Planning for sustainable cities by estimating building occupancy with mobile phones, *E. Barbour, C.C. Davila, S. Gupta, C. Reinhart, J. Kaur, and M.C. Gonzalez, Nature Communications, 2019*
  - Part of the US Squash- MIT Club Team 4.5 ladder. MIT Outing Club- completed 1-day Presidential Traverse
  - Only student to complete program in 3 semesters

- **Indian Institute of Technology Madras** Chennai, India
  B.Tech. & M.Tech.: Civil Engineering, Infrastructure Planning and Management *July 2010 - May 2015*
  - Awarded best research project in the Civil Engineering Research Symposium
    * Data Mining and Modeling for Smart Transit Management, *S. Gupta, M. Hickman, K. Srinivasan, Conference on Advanced Systems in Public Transit, Rotterdam, 2015*
    * Development and Evaluation of Advanced Traveller Information Systems for Indian Cities, A Case Study in Chennai City, *Center of Excellence in Urban Transport, IEEEJ(pending) 2015*
    * Data mining using Smart Cards from Brisbane- conference presentation, *First International Workshop on Utilizing Transit Smart Card Data for Service Planning (now TransitData), Gifu, Japan*
  - Scholarship for exchange semester at Concordia University, Montreal.
  - Entrepreneurship: Raised $10,000 to create a campus-wide social network. Worked as the Co-founder and President for over a year. Lead a team of 5 engineers and got over 1,000 students to sign up

VOLUNTEERING

- San Francisco food bank for packaging food for COVID-19 relief
- Open Street Maps- mapping Africa and other places, particularly those impacted by natural disasters.
- Summer Intern at Institute for Transportation and Development Policy, Chennai *May 2012 - July 2012*
- Summer Intern at Chennai City Connect, *May 2013 - July 2013*

OTHERS

- GMAT 750/800 (98th percentile)
- Awarded A* India Youth Scholarship by Ministry of Education, Singapore for 4 years of funded high-school education

COURSE WORK

- Machine Learning- Neural networks- CNN and RNNs, Random Forests, Logistic Regression, SVMs
- Microeconomics, Transportation demand and economics- Theory of the firm, Cost function, Pricing, Revenue Management, logit, probit and nested logit modeling
- Theory of Complex Networks, traditional Network Analysis- Shortest path, Minimum Cost, Maximum Flow problems