

# Aashish Sheshadri

www.aashish.me

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## EDUCATION

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**The University of Texas at Austin (UT Austin), Austin, TX** September 2012 – May 2014

**Master of Science in Computer Science (Thesis)**

- Concentration in Statistical Machine Learning and Human Computation; GPA 3.9/4.0

**Carnegie Mellon University (CMU), Pittsburg, PA** August 2011 – July 2012

**Visiting Student at the School of Computer Science**

- Perception, Planning and Computer Vision

**PES Institute of Technology (PESIT), Bangalore, India** September 2007 – July 2011

**Bachelor of Technology in Electronics and Communication**

- Concentration in Neural Networks, Embedded Systems and Control Systems; GPA 8.40/10
- Distinction honors; Awarded to top 10%

## WORK AND RESEARCH EXPERIENCE

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**PayPal (Strategic Architecture), San Jose, CA** October 2019 – Present

**Staff ML Applied Researcher/Architect (MTS 2)**

- Lead Architect Auto Scaling and Efficiency at PayPal (On Going)
  - ML Enhanced short-term Reactive Sizing
  - ML Enabled near-term and long-term Fleet Sizing
- Researcher on PayPal Quantum Collaboration with IBM and DWave (On Going)
  - Feature Selection Research via Hybrid ML + VarKITE and QUBO methods
- Research collaborator with Information Security and Engineering
  - NLU for Secure Environments

**Staff ML Applied Research Engineer (MTS 1)** October 2017 – September 2019

- ML Platform at PayPal.
  - Ideated and prototyped machine learning pipelines for the enterprise via custom Jupyter Notebooks on Kubernetes automatically leveraging distributed training, on HPC clusters (contributions to PPNotebooks).
  - Prototyped and realized deep seq2seq networks enabling time series forecasting for alerting and monitoring flows.
- Presented work on ML Pipelines at internal and external conferences including QCON AI and Strata 2019.

**Senior Research Engineer (SE III)** June 2014 - September 2017

- Lead on the open source SEIF Project (Douglas Crockford's Brainchild). Designed and implemented the SEIF protocol improving HTTPS as secure JSON over TCP intended to securely serve applications.
- Designed and implemented an entropy-miner to enable reliability from encryption libraries; Exposed and reinforced symmetric and asymmetric encryption toolset from Crypto++ as a Node.js addon.
- Designed and built an adaptive, intelligent and space cognizant layout manager using Cassowary.

**The University of Texas at Austin, Austin, TX**

**Graduate Research Assistant at UT CS advised by Prof. Matthew Lease** January 2013 – May 2014

- Investigated and designed Statistical Machine Learning techniques to enable automatic verification of crowd-sourced data.
- Investigated and implemented benefits of crowdsourcing to large-scale IR evaluation.

**Teaching Assistant at the Dept. of Computer Science** September 2012 – January 2012

- Programming Languages - Upper division undergraduate course.

**The Robotics Institute, Carnegie Mellon University, Pittsburgh, PA**

Research Associate advised by Prof. William L. "Red" Whittaker

August 2011 – July 2012

- Developed a novel method to enable global localization by terrain registration to Hi-Resolution Satellite Imagery.
- Investigated techniques and methods to estimate rover pose using visual odometry on planetary terrain.
- Implemented a method enabling automatic calibration of a multi sensor configuration (Camera-LIDAR).

Summer Scholar advised by Prof. William L. "Red" Whittaker

June 2010 – September 2010

- Implemented a Robotic System to Enhance Situational Awareness in Mine Rescue.
- Designed a system to enable sensor data visualization, robot communication and robot tele-operation.

**Hi-Tech Robotics Systemz, Gurgaon, India**

Jan 2011 – May 2011

Research Intern building Autonomous Robots and Mapping

**Indian Institute of Science, Bangalore, India**

Research Intern at Center for Electronic Design and Technology

June 2009 – January 2010

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**PUBLICATIONS**

**1. FASH-64: An Efficient Hash**

White Paper. Douglas Crockford and Aashish Sheshadri

**2. SEIF Protocol: Secure JSON over TCP**

White Paper. Aashish Sheshadri and Douglas Crockford

**3. A Collaborative Approach to IR Evaluation**

Masters thesis supervised by Kristen Grauman and Matthew Lease

**4. SQUARE: A Benchmark for Research on Computing Crowd Consensus**

Aashish Sheshadri and Matthew Lease

1st AAAI Conference on Human Computation (HCOMP), 2013

**5. SQUARE: Benchmarking Crowd Consensus at MediaEval**

Aashish Sheshadri and Matthew Lease

MediaEval: Crowdsourcing in Multimedia Task, 2013

**6. Position Estimation by Registration to Planetary Terrain**

Aashish Sheshadri, Kevin Peterson, Heather Jones and Red Whittaker

IEEE International Conference on Multisensor Fusion and Information Integration (MFI), 2012

**7. Mix and Match: Collaborative Expert-Crowd Judging for Building Test Collections Accurately and Affordably**

Mucahid Kutlu, Tyler McDonnell, Aashish Sheshadri, Tamer Elsayed and Matthew Lease

DESIRES 2018

**8. Complementary Flyover and Rover Sensing for Modeling Planetary Terrain Features**

Heather Jones, Uland Wong, Kevin Peterson, Jason Koenig, Aashish Sheshadri and Red Whittaker

8<sup>th</sup> International Conference on Field and Service Robotics (FSR), 2012

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**TECHNICAL SKILLS**

**Languages:** Proficient in Python, C++, Java, UNIX Shell scripting; Exposure to Haskell, Scala  
**Frameworks/Platforms:** PyTorch, TensorFlow, KubeFlow, TFX, KFServing, Seldon, Kubernetes  
Exposure to Spark, Kafka, AirFlow, Argo, Terraform

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**EXPERTISE**

- Strategy • Architecture • Leadership • Applied Research • Machine Learning • Deep Learning • Innovation • Speaker •