Stephen Lee
PhD. student, College of Information and Computer Sciences
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INTERESTS

Cloud computing, Cyber-physical systems, Energy analytics in computation sustainability

EDUCATION

University of Massachusetts, Amherst, MA **2013 - Present**
Ph.D Student, Computer Science
Advisor: Prof. Prashant Shenoy

Chennai Mathematical Institute, Chennai, India **2008 - 2011**
M.S., Computer Science
Thesis: Personalized knowledge creation using student's profile information
Advisor: Prof. Madhavan Mukund

St. Stephen's College, Delhi, India **2004 - 2007**
B.Sc.(G), Computer Science

PROFESSIONAL EXPERIENCE

Tata Research Development and Design Center, Pune, India
Researcher **May '11- Aug '13**

- Design and implemented tools for data center management and analysis.

Ignite, Tata Consultancy Services, Chennai, India
Software Engineer **Nov '07 to Apr '11**

- Full-stack web development of tools to enable learning and assessment in training center.

Tata Interactive Systems, Mumbai, India
Summer Intern **Jun '05 - Jul '05**

- Developed automation plugins for QuarkTool

PUBLICATIONS

[1] Srinivasan Iyengar, **Stephen Lee**, David Irwin, Prashant Shenoy. *Analyzing Energy Usage on a City-scale using Utility Smart Meters*. Proceedings of the 3rd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (ACM BuildSys). 2016.

[2] **Stephen Lee**, Srinivasan Iyengar, David Irwin, Prashant Shenoy. *Shared Solar-powered EV Charging Stations: Feasibility and Benefits*. Proceedings of the seventh Intl. Green and Sustainable Computing (IGSC), Hangzhou, China, Nov 2016.

[3] Vani Gupta, **Stephen Lee**, Prashant Shenoy, Ramesh Sitaraman, Rahul Urgaonkar. *How to Cool Internet-Scale Distributed Networks on the Cheap*. Proceedings of the seventh ACM Intl. Conference on Future Energy Systems (ACM e-Energy), Waterloo, Canada, June 2016.

[4] Akansha Singh, **Stephen Lee**, David Irwin, Prashant Shenoy. *SunShade: Software-defined Solar Power*. Proceedings of the seventh ACM Intl. Conference on Future Energy Systems (ACM e-Energy), Waterloo, Canada, June 2016 (Poster).

[5] Aditya Mishra, Ramesh Sitaraman, David Irwin, Ting Zhu, Prashant Shenoy, Bhavana Dalvi, **Stephen Lee**. *Integrating Energy Storage in Electricity Distribution Networks*. Proceedings of the sixth ACM Intl. Conference on Future Energy Systems (ACM e-Energy), Bengaluru, India, July 2015.

[6] **Stephen Lee**, Rahul Urgaonkar, Ramesh Sitaraman, Prashant Shenoy. *Cost Minimization using Renewable Cooling and Thermal Energy Storage in CDNs*. Proceedings of the 12th IEEE International Conference on Autonomic Computing (ICAC), July 2015.

[7] Vani Gupta, **Stephen Lee**, Prashant Shenoy, Ramesh Sitaraman, Rahul Urgaonkar. *Towards cooling Internet-Scale Distributed Networks on the Cheap*. Proceedings of the ACM Sigmetrics Conference, Portland, Oregon, June 2015. (Poster).

[8] Prateek Sharma, **Stephen Lee**, Tian Guo, David Irwin, Prashant Sharma. *Expect the Unexpected: Designing Derivative Clouds*. Proceedings of the Tenth European Conference on Computer Systems, EuroSys 2015, April 2015.

PATENTS

[1] Raman Srinvasan, Priyadarshini. Sridhar, Usha Rani, Swarna Srinivasan, **Stephen Lee**, Prema Subramaniam. *Personalized Content Generation*. Application No: 574/MUM/2011

[2] **Stephen Lee**, Mariyam L., Makarand K., Anjali G., Rahul Kelkar, Harrick Vin. *Analytical method for target state determination of datacenter having heterogeneous sub-systems*. Application No: 3521/MUM/2012

[3] Shruti Bhattacharya, Swaminathan Natarajan, **Stephen Lee**, Arpit Mandliya, Suman Singh, Kunal Ramdasi. *Evaluating Total Cost Of Ownership Based On System Design*. Application No: 1445/MUM/2013

PROJECTS

Solar power potential for residential rooftop
– Developed a web application to show rooftop solar potential.

ESP8266 Garage Opener
– Developed a cloud proxy service to communicate with ESP8266 ultrasonic sensor

Home Activity: Recognizing home activities using sensor data *Prof. Sridhar Mahadevan*
– Explored and Implemented various ML models for activity recognition. [Report]

OpenStack Trusted Advisory (Security) *Prof. Prashant Shenoy*
– Libraries for managing application level security for OpenStack

Remodel *Prof. Emery Berger*
– 'make' program that builds in parallel non-conflicting commands in a makefile

eTransform *Tata Research Development and Design Center*
– Tools development for data center consolidation and migration schedule optimization

OpenSeeSame, Online Aptitude Assessment Platform *Ignite, Tata Consultancy Services*
– Involved in development and deployments of the application

TCS Trainee Management Platform *Ignite, Tata Consultancy Services*
– Developed performance tracker and analysis platform

COURSES

Distributed Operating Systems, Systems, Machine Learning, Probabilistic Graphical Models, Advanced Algorithms

TEACHING EXPERIENCE

Teaching Assistant, University of Massachusetts, Amherst, MA

Course: Programming Methodology	**Fall 2014**
Course: Programming with Data Structures	**Spring 2014**
Course: Problem Solving with the Internet	**Fall 2013**

TECHNOLOGY

- **Programming Skills**: Python, Java/J2EE, Flex, C, C++
- **Web**: Full-stack developer: HTML/CSS, JavaScript, NodeJS, AngularJS, Ionic
- **Libraries**: Arduino, numpy, pandas, cvxopt, etc.

AWARDS AND RECOGNITIONS

- Completed PhD Portfolio with Distinction. Distinction awarded to two students per year.
- Winner of the HackUMass hackathon 2015
- Travel grants awarded for Sigmetrics 2015, ACM eEnergy 2015, ACM eEnergy 2016
- Received Tata Consultancy Services scholarship for my Masters education at Chennai Mathematical Institute (CMI)
- Semi-finalist (Promising Innovation category) in Tata Innovista for building TCS Online Assessment Online Platform.