Curriculum Vitae – Gaurav Mahajan

Personal Information

Gaurav Mahajan
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Education

Ph.D in Computer Science and Engineering — 2017 - Now
University of California, San Diego (US)

Integrated MS in Mathematics and Computing — 2008 - 2013
Indian Institute of Technology, Delhi (India)

Employment History

Graduate Research Assistant University of California, San Diego — 2017 - Now
- Working on *Non-convex Optimization* with Assistant Professor Sicun Gao to investigate the loss landscape of neural networks with non-linear activations and improve convergence properties of gradient descent algorithm.
- Working on *Program Synthesis for Safe Hybrid Systems* with Assistant Professor Sicun Gao and Assistant Professor Nadia Polikarpova to synthesize safe control for hybrid systems with non-linear dynamics on continuous real domain.

Software Engineer Microsoft, Seattle — 2014 - 2017
- Participated in shipping 3 major releases : GA, Private Preview and Beta3 refresh for PowerApps
- Implemented cross platform authentication stack supporting Windows, Android, iOS and Web
- Implemented architecture to ensure parity for apis which could be asynchronous or synchronous

Software Engineer Epic Systems, Madison — 2013 - 2014
- Improved document recommendation to help customers meet Meaningful Use requirements
- Appointed point person for technical problems related to Patient Instructions module

Summer Internee Ecole Normale Superieure, Cachan — 2012
- Selected as part of culture exchange program at ENS to work as summer internee
- Worked on finding probability measures with bounded errors on unfolding of various Petri Nets

Awards

MHRD Scholarship, awarded by Government of India for academic excellence at IIT Delhi — 2012
Yahoo! HackU, Winner of 24 hour hack marathon held at IIT Delhi — 2011
IITD Semester Merit Award, awarded for being among top 7% of students in IIT Delhi — 2008
CBSE Scholarship, awarded for securing State Rank 14 and All India Rank 377 in AIEEE — 2008
Rank 5, Regional Mathematics Olympiad sponsored by National Board of Higher Mathematics — 2006

Publications

Jacek Cyranka, Sicun Gao, **Gaurav Mahajan** (Alphabetical Order), The Loss Landscapes of Two-Layered ReLU Networks, *Submitted to NIPS 2018*

Selected Academic Projects

Banach-Tarski Paradox — 2013
- Discussed paradoxes from algebraic point of view in an expository article and relationship between Congruence by Dissection and Equidecomposability
- Discussed proof of Banach-Tarski Paradox using Hausdorff's Paradox and proof by absorption

Social Entertainment Website : The Toonatoes — 2011
- Developed a social website which converts a facebook status and consequent comments to a comic strip
- Winning entry in Yahoo! HackU University Hack Day organised by Yahoo R&D

Mobile Door Opening System — 2010
- Designed an interactive system to control a door remotely after reviewing the picture of visitor
- Programmed an Arduino based Bluetooth server to communicate with the phone installed on the door