Peng Gao

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OBJECTIVE

A lifelong explorer in computer science and quantitative skills, with expertise in computer security, machine learning and data science. Actively seeking full-time positions in computer science and computing-related fields.

EDUCATION

Princeton University, Department of Electrical Engineering   Princeton, NJ
Ph.D. in Electrical Engineering, advised by Prof. Sanjeev R. Kulkarni and Prof. Prateek Mittal   Sept. 2013 - June 2018
- Research Interests: Machine Learning, System & Software Security, Data Mining, Network Science

Shanghai Jiao Tong University, UM-SJTU Joint Institute   Shanghai, China
B.E. in Electrical and Computer Engineering   Sept. 2009 - July 2013
- Academics: Graduated with the Highest Distinction; Rank 1/172
- Honors: P.R.China-National Scholarship in 2010 & 2011 (top 2.4%); UM-SJTU JI Distinguished Academic Achievement Award (twice, top 2%); SJTU First-Class Academic Excellence (top 3%); Excellent Graduate of Shanghai; etc.
- Experience: Internship with SimInsights Inc. (CA, USA); Teaching Assistant for five core mathematics courses; etc.

PROFESSIONAL EXPERIENCE

Facebook   Menlo Park, CA
Software Engineer Intern, Site Integrity Team   Jun. 2017 - Sept. 2017
- Developed efficient algorithms for large-scale group post spam detection, by leveraging state-of-the-art deep learning and natural language processing technologies.
- Deployed the solution in production which reports > 700,000 (previously uncaught) spam posts/day with high precision.

NEC Laboratories America   Princeton, NJ
Research Intern, Computer Security Department   Oct. 2016 - Dec. 2016
- Designed a concise and expressive continuous domain-specific language, Stream Anomaly Query Language (SAQL), which empowers enterprise security analysts to monitor a broad set of abnormal system behaviors in real time.
- Developed the SAQL data stream management platform that leverages semantics-based query results sharing to optimize the SAQL query execution.

NEC Laboratories America   Princeton, NJ
Research Intern, Computer Security Department   Nov. 2015 - Jan. 2016
- Designed a concise and expressive domain-specific language, *Temporal Behavioral Query Language (TBQL)*, which empowers enterprise security analysts to query risky system behaviors for Advanced Persistent Threats investigation.
- Developed the TBQL query system which scales up to terabytes of data and outperforms general database query system PostgreSQL 47x (with maximum 335x) in execution efficiency.
- Deployed the solution in production in the comprehensive security intelligence platform built by NEC, which won first place in the Town Life and Society Innovation Category at CEATEC award 2016.

Microsoft Research   Redmond, WA
Research Intern, Systems & Security Team, in collaboration with Azure Forensics Team   June 2015 - Sept. 2015
- Developed robust algorithms for cloud-based fraud detection, by leveraging big data analytics.
- Deployed the solution in production on Microsoft Azure platform and detected > 10 types of unseen fraud.

SELECTED RESEARCH & COURSE PROJECTS

Fake Accounts Detection in Online Social Networks   Developed a defense-in-depth framework that combines local attributes with global structure for robust fake accounts detection. Evaluated the framework on a large Twitter network comprising 50M nodes and 265M edges, and demonstrated its superiority over state-of-the-art.

Machine Learning Algorithms in Octave   Linear & Logistic regression; Neuro Networks for hand-written digits recognition; SVM for spam filtering; K-Means clustering and PCA for image compression; Anomaly Detection for detecting failing servers; Collaborative Filtering for movie recommendation; AdaBoost for Optical Character Recognition

Artificial Intelligence Algorithms in Java   A* for solving Rush Hour puzzles; WALKSET for solving CNF satisfiability; MCMC for inference on Bayes nets; Viterbi for HMM; Value/Policy Iteration for MDP

Text Recognition and Translation App on Android Smartphone   The app takes a picture of the English text and displays its Chinese translation on screen. I wrote the client in Java and Matlab, and built a localhost server in PHP.

SKILLS & INTERESTS

Skills: C, C++, C#, Java, Python, Matlab, Octave, R, Haskell, Shell, SQL, HTML, CSS, Javascript, Verilog, MIPS, x86-64 Assembly, SAS, LaTeX, Markdown, Unity Game Development, Android Development, Apache Spark, Splunk, Neo4j

Interests: Reading, Traveling, Basketball, Table Tennis, Jogging, Swimming