Siwei "Robert" Li

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Education

Georgia Institute of Technology, Atlanta, GA   *2016 - 2020*
B.S. in Computer Science (GPA: 3.88/4.0) Highest Honor

Experience

Google, San Francisco, CA   *June 2020 - Present*
Software Engineer II (L3)
Building and improving mission-critical internal data pipeline systems.

Google, San Francisco, CA   *Summer 2019*
Software Engineering Intern
Built an RPC service and a web application adding explainability to a machine learning anomaly detection model in order to generate intuitive alerts for abnormal enterprise Google Doc access.

Georgia Institute of Technology, Atlanta, GA   *Fall 2017 - Spring 2020*
Undergraduate Research Assistant, School of Computational Science and Engineering
Advisor: Prof. Duen Horng (Polo) Chau
Member of the Polo Club of Data Science, where I innovate at the intersection of **data science and human-computer interaction (HCI)** to synthesize scalable, interactive, and interpretable tools that amplify human's ability to understand and interact with big data.

Panasonic Automotive Systems, Peachtree City, GA   *Summer 2017*
Software Engineering Intern
Developed an extensible analytics tool in **Java/Electron/React/d3** that enables engineers to create automated sequences that generate various analysis reports; estimated to **reduce 30% of testing time**.

Publications

Argo Lite: Open-Source Interactive Graph Exploration and Visualization in Browsers   *CIKM'20*
Siwei Li, Zhiyan Zhou, Anish Upadhayay, Omar Shaikh, Scott Freitas, Haekyu Park, Zijie J. Wang, Susanta Routray, Matthew Hull, Duen Horng Chau
29th ACM International Conference on Information and Knowledge Management (CIKM'20), October 19–23, 2020, Virtual Event, Ireland.
Track: Resource

MLsploit: A Framework for Interactive Experimentation with Adversarial Machine Learning Research   *KDD'19*
Nilaksh Das, **Siwei Li**, Chanil Jeon, Jinho Jung, Shang-Tse Chen, Carter Yagemann, Evan Downing, Haekyu Park, Evan Yang, Li Chen, Michael Kounavis, Ravi Sahita, David Durham, Scott Buck, Polo Chau, Taesoo Kim and Wenke Lee
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD). Aug 4, 2019. Anchorage, Alaska USA.
Project Showcase, Oral presentation

Mixed Reality for Learning Programming   *IDC'19*
Joonyoung Kim, Sudeep Agarwal, Kristina Marotta, **Siwei Li**, Jonathan Leo, Duen Horng (Polo) Chau
18th ACM Conference on Interaction Design and Children, Jun. 2019.
Poster, **Honorable Mention**

Shield: Fast, Practical Defense and Vaccination for Deep Learning using JPEG Compression   *KDD'18*
Nilaksh Das, Madhuri Shanbhogue, Shang-Tse Chen, Fred Hohman, **Siwei Li**, Li Chen, Michael E. Kounavis, Duen Horng Chau
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD). Aug 19, 2018. London, UK.
Track: Applied Data Science, **Audience Appreciation Award Runner Up**

Compression to the Rescue: Defending from Adversarial Attacks Across Modalities   *KDD'18*
Nilaksh Das, Madhuri Shanbhogue, Shang-Tse Chen, Fred Hohman, **Siwei Li**, Li Chen, Michael E. Kounavis, Duen Horng Chau
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD). Aug 19, 2018. London, UK.
Project Showcase

Selected Projects

Intel MLsploit, *Adversarial Machine Learning Research Platform*   *Fall 2018 - Spring 2019*

Developed an extensible research platform for security and ML researchers to interactively construct transformation and evaluation pipelines.

NIH mHealth Visual Discovery Dashboard, *Part of NIH's MD2K (Mobile Sensor Data-to-Knowledge) Initiative*   *Spring - Fall 2018*

Developed an analytics dashboard for timeseries health data collected from mobile devices using Kotlin and React. Integrated into Cerebral Cortex Data Analytics Platform by **NIH MD2K Center of Excellence**.

Argo Graph, *Large-scale Graph Visualization Tool*   *Fall 2017 - Spring 2020*

Developing the next cross-platform interactive graph visualization tool capable of handling **million-edge** scale network data using WebGL, Node, and SQLite. Argo is used in **CSE 6242 Data and Visual Analytics** course, that **teaches over 1000 students** per year.

Selected Personal and Open Source Projects

NSF Smart Meter Data Portal: Searchable Github-based data-sharing platform for energy researchers   *Spring 2018*

HackGT/SponsorshipPortal: Intelligent portal for hackathon sponsors to search resumes of participants   *Fall 2017 - Fall 2018*

Beginners-Cordova-Tutorial: Website teaching Apache Cordova development to beginners, written in Sphinx   *Spring 2017*

V-Plate: Voice-controlled food delivery robot built with RaspberryPi 3 with an Android client   *Spring 2017*

On-campus Activities

VIP Project: Health Informatics on FHIR, Atlanta, GA   *Fall 2018 - Fall 2019*
Development Team Lead

Develop FHIR applications to improve Emergency Room and Triage efficiency. Currently working with Grady Memorial Hospital, the fifth-largest public hospital in the US, with one of the busiest ER in the country.

HackGT Organizers Team, Atlanta, GA   *Spring 2017 - Fall 2019*
*Organizing **Largest** College Hackathon in the Southeast (1000+ Students)*

Hold hackathons and workshops; make open source projects for event organizers; mentor beginners and high school students.

Awards/Scholarships

Outstanding Undergraduate Research Award, *Georgia Institute of Technology College of Computing*   *Spring 2020*
Annual Award for 1 or 2 undergraduate researchers, $500

President's Undergraduate Research Award (PURA), *Georgia Institute of Technology*   *Fall 2019*
PURA Salary Award for faculty research, $1500

Selected Skills

Languages: Java, Python, JavaScript (ES6+), TypeScript, Kotlin, Swift, C++, SQL, Bash, PHP, Go
Web: React, Redux, Node/Express, Electron, Django, Flask, CodeIgniter, HTML, CSS, JQuery
Mobile: Android, Cordova, iOS/ARKit
Data Science: Machine Learning (scikit-Learn, Tensorflow, numpy, pandas), Data Visualization (D3, matplotlib)
Miscellaneous: Infrastructure (Docker, Kubernetes, Vagrant), Build Systems (Gradle, Webpack, Travis CI)