Nick Fahrenkrog

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Education

Georgia Institute of Technology, College of Engineering — Atlanta, Georgia
Bachelor of Science in Electrical Engineering, Minor in Mandarin Chinese — *Graduated: December 2017*
- GPA 3.69 | Honors Program (1 of 150 students chosen per class)

Awards

- 1 of 2 students selected by representatives from Georgia Tech's Office of Government Relations to receive the Federal Jackets Fellowship ($7500 stipend) to serve in the federal government on the criteria of leadership potential, academic study, and work experience
- Faculty Honors (Fall 2013, Fall 2017), Dean's List (Fall 2014, 2015, 2016, Spring 2014, 2016)

Hackathon Performance
- 1st Place Overall at Bloomberg CodeB @ Georgia Tech 2017
- 1st Place Overall and Best Mapquest Hack by Mapquest at HackGSU 2016 against 50+ teams
- "That's So Cash Award of Awesomeness" by HBK Investments at HackGT 2016 against 174 teams
- "Best iOS App" by Apple Inc. at HackGT 2014 against 700+ other students
- "2nd Most Ambitious Hack" by AppCow at Bitcamp 2015 against 160 teams

Work Experience

Yelp — *San Francisco, CA*
Part-time Software Engineer — *Aug 2017 – Present*
- Wrote highly performant database triggers for screenshotting data and field assignment
- Coded batches that process tens of thousands of records daily

Yelp — *San Francisco, CA*
Software Engineering Intern — *May 2017 – Aug 2017*
- Rewrote external API client from scratch which reduced the time to get results for a single day from 1 minute 55 seconds to 3 seconds and the number of calls from 3 + 3 * N to 4 (where N is the number of results, usually in the order of tens)
- Completely redesigned two web pages: one for registering advertisers for orientation, the other for displaying orientation information including who attended, questions each person asked, and responses to surveys
- Proposed and implemented complete automation of importing data from external source, which previously required some manual interaction daily

Stackfolio — *Atlanta, GA*
Full-Stack Web Developer — *May 2015-May 2016, Aug 2016 – Dec 2016*
- Developed marketplace in Django for banks to buy and sell loan packages mirroring the process facilitated by brokerage firms
- Optimized data portal which lead to an 80% improvement in load time
- Implemented group chat and notification system for progression through transaction process on a Python/Twisted server
- Fully automated FFIEC call report and UBPR data collection and created web portal to manage these processes
- Engaged with seasoned entrepreneurs from Tech Square Labs (a Google for Entrepreneurs incubator) on business strategy
- Integrated Docusign API to handle non-disclosure and transaction agreements on the platform

Texas Instruments — *Dallas, TX*
Demand Creation Development Intern — *May 2016-Aug 2016*
- Discovered and fixed a security flaw that could be exploited to execute malicious SQL queries on sales data
- Resolved several high priority security concerns raised in recent security audit that had to be completed before September or would be reported to board of directors
- Developed more efficient tool for salespeople to manage information on and categorization of leads/sales in Javascript and PL/SQL which reduced the time to perform these processes from four hours to ten minutes

White House Council for Environmental Quality — *Washington D.C.*
Office of Federal Sustainability Intern — *Jan - May 2015*
- Performed data analysis in R that found that the original targets of Executive Order 13693 (which was signed by President Obama) were not ambitious enough to meet its mission
- Suggested more appropriate targets to be used on the Executive Order
- Helped write a section of the Executive Order's implementing instructions on the mathematical basis for the proposed reductions
- Developed data forecasts for use by CEQ leadership to make the case for change across federal agencies
- Automated the process of converting Excel-based documents government agency submissions into the format needed by online tool
- Orchestrated meetings with managers of transportation-focused teams inside the federal government to explore the feasibility of the reductions proposed in the executive order and to focus on new legislation from having an increased number of electric vehicles

CS 1371 Computing for Engineers (Matlab) — *Atlanta, GA*
Teacher's Assistant — *Jan - May 2014, Aug - Dec 2014*
- Planned and taught undergraduate engineers a 90-minute recitation weekly
- Wrote, proctored, and graded students' examinations every three weeks
- Hosted weekly office hours to help students with homework and the material taught in class

Projects

Toll Labs *Jan 2017 – Present*
- Designed and built circuitry for a $15 device that connects to a mobile phone to detect broad ranges of pathogens (bacterial vs non-bacterial, gram-positive vs gram-negative, etc.)
- Received $22,000 of funding from two sources so far
- Reached semifinals of Georgia Tech's Inventure competition

Bloomberg CodeB Competition *Jan 21 2017*
- Awarded 1st place against over 20 teams
- Wrote algorithm in Python to compete in making the most money buying and selling stocks on a stock market simulation platform

Aquasource - HackGSU *Oct 21-23 2016*
- Awarded 1st place overall at HackGSU and Best Hack by Mapquest
- Created iPhone app that lets users crowd-source water quality data on a map by interacting with a cheap spectrometer (constructed out of a phone + $10 of materials) that identifies the presence of contaminants in water sources

Wingit Website - HackGT *Sept 23-25 2016*
- Awarded "That's So Cash Award of Awesomeness" from HBK
- Developed website with Django that optimally seats people based on LinkedIn or unique shared Facebook likes and a service that analyzes twitter to determine a person's mood to recommend an in-flight movie

Publy Website – DIY with TI: Intern Edition *Jun 20- Aug 3 2016*
- Built sensor peripheral with BeagleBone to detect what kind of music is playing at a bar, and record foot traffic leaving the bar
- Developed website with Django to display metrics about gender, check in activity, age, and music of bars in the area
- Wrote an API to collect these metrics directly from a driver's license scanner

Beheard Website – Bitcamp Hackathon *Apr 10-12 2014*
- Awarded 2nd Most Ambitious App by App-Cow
- Developed website with Django that analyzes twitter to connect representatives with their constituents on important issues

Babelboard iOS8 Keyboard - HackGT *Sep 19-21 2014*
- Awarded best iOS app by Apple Inc.
- Built custom iOS8 keyboard in Swift that translates text into foreign languages and evaluates math expressions

Matlab Graphics Shader *Dec 2013*
- Applied knowledge of linear algebra to develop a 2-d shader in Matlab

Organizations

Theta Xi Fraternity @ Georgia Tech *Jan 2014 – Present*
High Performance Computing Club @ Georgia Tech *Jan 2017 – Present*
- One of seven students training to compete in the international Student Cluster Competition
- Optimized a $60,000 Power8 cluster on loan from IBM to run the following applications most efficiently: LINPACK, High Performance Conjugate Gradients, and Tersoff Multi-Body Potential
- Before receiving cluster from IBM, prepared on four clusters including Top500 Comet@SDSC

Computer Science Skills

PROGRAMMING LANGUAGES (RANKED):
- 1: Python, 2: Javascript, HTML, CSS, 3: Java, 4: Matlab, 5: R, 6: C++

FRONT-END WEB DEVELOPMENT:
- JQuery, Zurb Foundation, React.js, Bourbon.io/Neat/Bitters, Ember.js

BACK-END WEB DEVELOPMENT:
- Django, Parse, MongoDB, PL/SQL

HIGH PERFORMANCE COMPUTING:
- MPI, PThreads, CUDA, OpenGL (ECE 4122)

EMBEDDED SOFTWARE:
- Small Hardware Projects in C++ on MBed (ECE 2036), Programmed Robot in Assembly, Used VHDL to Create Parts of a Processor (ECE 2031)

Electrical Engineering Skills

DIGITAL SIGNAL PROCESSING:
- Sampling and Aliasing, Discrete Time Signals, Fourier Transforms, Z-Transform, Random Signals (ECE 2026, 3084, 4260)

DIGITAL SYSTEMS:
- Finite State Machines, Sequential and Combination Logic Circuits, Instruction Set Architectures, Microcode (ECE 2020)

CLEANROOM EXPERIENCE:
- Manufactured System-in-Package Substrate (ECE 4755) and MOSFETs on Integrated Circuit (ECE 4452) in Clean Room

CIRCUIT DESIGN:
- Oscillators, First & Second Order Filters, Half & Full Wave Rectifiers, Amplifiers and Guitar Pedals (ECE 2040, 3043, 4893)
- MathCad, LTSpice, NI Multisim for Modelling

ELECTRICAL ENERGY SYSTEMS:
- Renewable Energy Modeling (Hydroelectric, Solar, Wind), Energy Storage, Three Phase Rectifiers, Buck Converters (ECE 3072)