

RICHARD LIU

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EDUCATION

Duke University, Pratt School of Engineering

Durham, NC

Majors: *Electrical and Computer Engineering, Mathematics* | **Minor:** *Computer Science*

August 2013 - May 2017

- **GPA:** 3.65/4.00
- **Awards:** Dean's List (Fall '14, Spring '15), National AP Scholar, Boeing Fellow
- **Research Interests:** Statistical Signal Processing, Machine Learning, Soccer Statistics, Natural Language Processing
- **Papers:** Robot Hide and Seek [July 2012, *Rutgers School of Engineering*], Novel Integrative Virtual Rehabilitation Reduces Symptomatology of Primary Progressive Aphasia [November 2014, *International Journal of Neuroscience*]

WORK EXPERIENCE

Versame Inc.

Durham, NC

Software Development and Data Analytics Intern

June 2015-August 2015

- Replicated state-of-the-art speech activity detection (SAD) research and programmed feature extraction algorithms to adaptively model conversational speech, with an error rate comparable to that of the leading open-source program.
- Designed and produced data analysis error and visualization tools to score different SAD models in Python and MATLAB.
- Conducted research experiments to detect the presence of television programs within an audio recording using machine learning techniques.

Bright Cloud International Corp.

Highland Park, NJ

Summer Intern

May 2014 - August 2014

- Led an 8-week research study teaching 11 dementia patients rehabilitative games at Parker Adult Day Program and tracking progress in cognitive functions, leading to measured improvements in range of motion and memory. Research paper published in *The International Journal of Neuroscience*.
- Created in-house PHP web-tool to dynamically organize and model medical data from MySQL database.
- Developed and improved therapeutic computer games for dementia patients by testing, documenting and fixing bugs in the games.

EXTRACURRICULAR INVOLVEMENT

Scale and Coin Professional Business Society

Durham, NC

VP of Finance

September 2013 - Present

- Create yearly financial projections including forecasting cash flow and expenditures by modeling historical financial data.
- Manage membership dues, expenditures, reimbursements and budgeting for 60 members.
- Completed business education-oriented Pledge, winning 2 out of 5 weekly inter-pledge business competitions.

Boeing Grand Challenges K-12 Outreach Program

Durham, NC

Student Fellow

October 2014 - May 2015

- Formulated and executed reproducible five-point plan "modules" to teach local public elementary schools science and engineering topics in accordance with North Carolina education standards.
- Designed and taught interactive science lessons to 50+ fifth-grade students twice per week at Merrick Moore Elementary School and Central Elementary School.
- Operated an afterschool "Coding Club" for low-income students once per week at Central Elementary School.

PROJECTS

quickLIUM and quickSHoUT: Scripts that performs speaker activity detection (using LIUM or SHoUT speech recognition toolkits) and creates visualizations of audio data.

DukePetitions: Web-app that centralizes student petitions for Duke Student Government.

LoLTeamTactics: Data gathering and analysis tool that statistically determines the best team compositions for the online game *League of Legends*.

Atlas: Codex Hackathon web-app that parses the text of a book and displays on a Google Map the various settings in the book.

SKILLS AND INTERESTS

Technical Skills: MATLAB, Java, Python, Node.js, C, PHP, MySQL, HTML/CSS

Languages: Mandarin Chinese [Conversational Fluency]

Interests: Intramural soccer, Tennis, Learning chess, Nonfiction and autobiographies, Educational outreach