

Joshua G. Send

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University of Cambridge

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Education

<i>MEng, Computer Science, University of Cambridge</i>		<i>2017 - 2018</i>
Large Scale Data Processing and Optimization // Probabilistic Machine Learning		
Computer Vision // Modern Compiler Design // Advanced Topics in Computer Systems		
Dissertation: "Offboard Sensor Placement for Autonomous Robot Navigation"		
<i>1st Class BA Hons, Computer Science. University of Cambridge</i>		<i>2014 - 2017</i>
Dissertation: "Conflict Free Document Editing with Different Technologies"		
<i>4.69 GPA (3.92 unweighted), Torrey Pines High School, San Diego, USA.</i>		<i>2010 - 2014</i>

Technical Skills

Languages: Python, C/C++, HTML/CSS/JS/TS/React, Java, ML

Python, Java, Web technologies learned through Android and web development projects. ML/C were taught as part of the Cambridge CS curriculum. C++/JS/TS used at Autodesk in 2016 and JS/TS extensively in 3rd year dissertation. Masters coursework projects relied heavily on Python/C++.

Databases: MySQL, MongoDB

MySQL used during various hackathon, and in 2015 internship at TNG Technologies (extensively modified ecommerce database). MongoDB used while developing Australian politics web-app prototype.

Applications: Git, MATLAB, Mathematica

Git used throughout personal and university work. MATLAB learned through first year Cambridge coursework. Mathematica used in high school Advanced Topics course.

Theory: Language semantics, large scale data processing (eg. Spark, Naiad, GraphX) & much more

Experience with: OpenGL/WebGL, TensorFlow, LLVM, ArduPilot, Prolog, System Verilog, RISC.

Experience

<i>Bachelors Dissertation (Cambridge)</i>		<i>2017</i>
"Conflict Free Document Editing with Different Technologies" - Designed and analyzed a collaborative text editor using CRDTs in comparison to a text editor using OT (technology backing Google Docs). Extended CRDT to allow undo and redo of operations. Discovered CRDTs perform better under high concurrency and replication while OT works well for large documents.		
<i>Research Intern, Cambridge University</i>		<i>Summer 2017</i>
Worked under Prof. Cecilia Mascolo on drone-to-drone collision avoidance using ADS-B. Built framework for evaluating existing collision avoidance in the AruPilot firmware, then outlined a novel strategy for n-way deconfliction using uni-directional communication.		

Intern, Autodesk Inc. (San Francisco)

Summer 2016

Developed prototype functionality for AutoCAD, predicted to be in production in a few years. Worked with JS/TS for prototype, then added basic functionality to AutoCAD core (C++). NDA.

Intern, TNG Technology Consulting (Munich)

Summer 2015

Worked as part of a agile (Scrum) team of software developers for a client's web-shop. Required interacting with the client's representative regularly; configured Lobster intermediary between different servers. Debugged web-frontend Javascript and extensively modified backend SQL database for ecommerce upgrade, including more flexible product categorization system.

Cambridge Year 2 Group Project

2016

Leader & developer on a team of 6 building an effective interface for exploring large forums by topic and sentiment, in order to extract conclusions of value to the sponsoring company Jagex.

Hackathons

2014-2017

Hack Cambridge '17: Team of 4 making IOT pidgeonhole sensor! Combined IR sensor, wireless chip, a backend, a friendly website, and email notifications to successfully ping the owner when new mail
Jane Street Hackathon '14 & '15: Competed two years in algorithmic trading challenge
LAHacks '14: Co-wrote large part of an Android app and Python/SQL backend to organize meetups between friends, rating participants on tardiness; also employed Twilio SMS API, position tracking

Science Fair

2013

Localizing impacts on a 2-D plane using three accelerometers, an Arduino, and wavelet analysis. 1st place category, multiple awards & progression to California State Science Fair.

High School Internships & Clubs

2012-2013

Department of M.E. San Diego State University '13: Wrote Python cleanup scripts for professor's teaching material. HTML, CSS webpage editing
IT Department Birch Aquarium At Scripp '12: Helped with linux system administration, set up sandboxed information kiosks, Helped employees with computer issues
Computer Science League: President '13-'14. Taught topics such as boolean algebra, DE, etc.
Botball autonomous robotics: Leader '13-'14. Placed 3rd in '14, 1st in '13, 1st in '12, 2nd in '11

Personal Projects

FFT based lights/music sync – LED lights synced to beats in music using a real time FFT processed on an Arduino (see joshuasend.me for video)

Trinity Hall Room Selection system – Website visualizing college floor plans and fills in occupancy information with student details in real time. Uses HTML/JS/CSS/SVG frontend and Python backend

Trinity Hall June Event Webmaster – create website for college's yearly end of the year ball – http://joshuasend.me/JE/v1_TokyoToKyoto/index.html & http://joshuasend.me/JE/v2_Metropolis/index.html

Political Information Website (Australia) – working with Australian politics student to help cure the general political apathy present in Australia (React prototype <http://joshuasend.me/whatfloatsyourvote/>)

Other Skills & Experience

Languages – English (fluent), German (fluent), Spanish (medium level)

Sport – Tennis (10 years including high school varsity level), Rowing

Hobbies – Producing wooden bows and archery, Skiing, Reading, Hiking, Camping, Piano