

Thomas Kaunzinger

Available January through June 2020

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🐙 github.com/McNibbler

🌐 [Thomas Kaunzinger](#)

🔗 thomas.coffee

Education

Northeastern University	<i>Boston, MA</i>	<i>2016-2021</i>
<i>Computer Engineering and Computer Science</i>	<i>GPA: 3.65</i>	<i>Dean's List</i>
<ul style="list-style-type: none">• Relevant Studies: Digital Logic Design, Computer Systems, Electronics, Algorithms and Data, Embedded Design: Enabling Robotics, Object Oriented Design, Linear Systems, Circuits and Signals, Logic and Computation, Physics, Networks, Computer Science Fundamentals, Discrete Structures, Linear Algebra, Differential Equations, Probability		
Marine Academy of Technology and Environmental Science	<i>Manahawkin, NJ</i>	<i>4.0 Unweighted</i>

Work Experience

Auris Health / Johnson & Johnson Ethicon	<i>Redwood City, CA</i>	<i>2019</i>
<i>Surgical Robotics Electrical Engineer / Systems Co-op</i>		<i>Jan-June</i>
<ul style="list-style-type: none">• Designed complex, flexible hardware suite for driving and evaluating multiple critical robotic systems• Created software libraries/GUI to interface with above suite and control/monitor numerous system hardware configurations• Implemented complex real-time communication protocols (e.g. EtherCAT) in Linux and RTOS to ensure reliable lower-level control of high-risk robotic systems• Designed and laid-out complex schematics/PCBs in Altium; e.g. communication translation interfaces and motherboards• Performed full system analyses for international standard compliances (e.g. IEC-60601), power consumption statistics, etc.• Helped develop and debug driver firmware for RFID communication, motor controllers, etc.• Oversaw and met with manufacturers to define design requirements for compliance of strictly regulated product subsystems		
XCerra Corp., LTX/Credence / Cohu Inc.	<i>Norwood, MA</i>	<i>2018</i>
<i>Analog Hardware Design Engineer Co-op</i>		<i>Jan-June</i>
<ul style="list-style-type: none">• Designed digital/analog schematics and PCBs for high precision RF automatic test equipment• Developed drivers and command language structure for interfacing from GUI to custom designed microcontroller for programming complex integrated circuits at the register level with communication protocols such as I²C, SPI, etc.• Wrote tools for visualizing transfer functions/distortion residuals, performing DSP, processing complex STDF data, etc.		
Netcetra LLC	<i>Toms River, NJ</i>	<i>2016</i>
<i>Web Design and Marketing Intern</i>		<i>Feb-Sep</i>

Technical Skills/Experience

Languages	C++, C, Java, x86-64 and MIPS Assembly, Verilog, Python, R, Bash, MATLAB, LaTeX, QMake, Racket and ACL2 Variants, Protocol Buffers, HTML, CSS
Software	Altium, Linux, LTSpice, PSpice, TINA, Cadence, Git, Qt/QtCreator, R-Shiny, Simulink, EtherCAT, Make, Vim, Jetbrains, RTOS, VS, Sublime, Eclipse, Solidworks, AutoCAD, Wireshark, ECEngineer, TwinCAT, Aardvark/Beagle
Hardware	PCB layout, analog/digital hardware design, FPGAs and HDLs, oscilloscopes, spectrum analyzers, signal generators, logic analyzers, PSUs, multimeters, embedded systems, micro-soldering, 3D printing, RF design, Arduino
Projects	Custom Keyboards: Designed PCBs and 3D-printed cases, hand-wired/soldered matrix, built custom firmware AzEl Satellite Tracker: Radio antennae controlled by motorized tracker system to communicate with orbiting satellites Personal Website: Responsive site written from scratch using HTML, CSS, and JavaScript knowledge (thomas.coffee) Custom Microcontroller: Designed custom ATmega-powered microcontroller with tiny footprint and 3.3V I/O Bluetooth Robot Arm: Prepared firmware/FPGA to accept Wiimote inputs for precise control of robotic arm HTTP Web Server: Created Python web server capable of interpreting HTTP requests and returning requested content <i>Full project portfolio can be found on my website (thomas.coffee/projects)</i>

Activities, Leadership/Volunteer Experiences

Northeastern University Undergraduate Research	<i>Boston, MA</i>	<i>2018-present</i>
<ul style="list-style-type: none">• Imaging of subdermal blood flow through differences in speckle patterns produced by laser refraction• Apply digital signal processing techniques to track changes using MATLAB and R		
Northeastern University Wireless Club	<i>Boston, MA</i>	<i>2016-present</i>
<ul style="list-style-type: none">• Electrical engineering club to design using wireless technology. On team for satellite tracking/radio communication project.		
Boy Scouts of America (Troop 17 – Eagle Scout, 55+ Merit Badges, Senior Patrol Leader)	<i>Brick, NJ</i>	<i>2003-present</i>
<ul style="list-style-type: none">• Constructed \$8200+ concrete wheelchair ramp for church, overseeing 40+ scouts/adults; 520+ personal hours• Established local laws for free public/private handicap permit availability (Brick Twp. ordinance §145-5)		

Attributes and Interests

- Marching/Concert Band, Competitive Birding, Video Production/Editing, Competitive Rubik's Cube Solving/Collecting
- **Spanish Language:** Proficient; **Russian Language:** Intermediate