Jiacheng Jason He
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Education

Stanford University, M.S. Electrical Engineering, GPA: 3.67/4.00 — June 2019 (expected)
- Relevant Courses: Convolutional Neural Networks, Medical Imaging Systems, Image Systems Engineering

University of Texas at Austin, B.S. Electrical Engineering with Honors, GPA: 3.84/4.00 — May 2017
- Relevant Courses: Biomedical Instrumentation Design Lab, Embedded Systems Design Lab

University of Edinburgh, Semester Abroad — Spring 2016

Skills

Electronics	PCB design, analog IC design, transformer design, antenna design
Embedded Systems	Embedded C, C++, assembly, Verilog, FPGA, ARM Cortex-M4, Arduino, Raspberry Pi, IoT
Software	Python, neural networks, TensorFlow, PyTorch, MATLAB, Java
Research	Lab equipment (oscilloscope, multimeter, waveform generator, soldering), paper writing
Prototyping	CAD, 3D printing, laser cutting, CNC milling
Soft Skills	Chinese (Mandarin), leadership, communication, interdisciplinary collaboration

Experience

Apple, iPad Hardware Intern — Jun 2018 - Sep 2018
- Prototyped new features for MacBook and iPad, collaborating closely with Product Design and Firmware teams
- Wrote Verilog modules and test benches, ran simulations, and synthesized and debugged FPGAs

Stanford Genome Technology Center, Graduate Research Assistant — Sep 2017 - Nov 2017
- Designed, fabricated, and tested inkjet-printed microfluidics electrodes for cell separation
- Learned COMSOL software for electromagnetic field simulations and prepared cancer cells for experiments

InSilixa, Embedded Systems Intern — May 2017 - Aug 2017
- Wrote motor control firmware and Python scripts for ST L6470s in a daisy-chain SPI configuration
- Prototyped rigs to contain test setup in Autodesk Fusion 360 and 3D printed models

University of Texas at Austin, Embedded Systems Design Lab Teaching Assistant — Jan 2017 - May 2017
- Independently led two lab sessions of twelve students each week
- Explained, debugged, and graded ten lab assignments, covering: embedded C, interrupts, ADC, DAC, WiFi, Bluetooth, UART, SPI, I2C, power supply design, motor control, and PCB design

GE Industrial Solutions, Edison Electrical Engineering Intern — Jun 2016 - Aug 2016
- Engineered a 95% efficient inductive charger for autonomous electric vehicles
- Wrote and published paper in peer-reviewed conference and journal
  - E. Fontana, **J. He**, et al., "More Efficient Inductive Electric Vehicle Charger: Using Autonomy to Improve Energy Efficiency," SAE International Journal of Alternative Powertrains. 6(2):2017, doi:10.4271/2017-01-1216.

University of Texas Bio-Integrated Electronics Group, Undergraduate Research Assistant — Feb 2015 - Dec 2015
- Designed flexible pulse oximeter using thin film deposition and novel cutting techniques
- Created noninvasive flexible skin sensors to measure EKG, temperature, and hydration

Texas Instruments, Embedded Applications Engineering Intern — Jun 2015 - Aug 2015
- Tested and documented new software debugging tools
  - **J. He** and D. Dang,"MSP432 Debugging Tools: Using Serial Wire Output With Code Composer Studio," Texas Instruments, Application Note 674A, 2015.

Quad-J Solutions LLC, Research Intern — May 2013 - May 2014
- Developed a 96% accurate, heuristics-based algorithm for expedited cardiac CT scan image processing
- Wrote a preliminary business plan and presented idea to American Heart Association

Projects

PineappLeNet: Machine Learning for Medical Video Generation — Apr 2018 - Present
- Training convolutional neural networks for pediatric abdominal MRI video generation for clinical applications
- Using PyTorch for current version for dynamic computational graph capabilities (previously used TensorFlow)

docdoc: Medical Document Parser — Jun 2018 - Aug 2018
- Wrote Python script for the Dallas-Fort Worth Hepatitis B Free Project to parse PDFs and generate CSVs

Stanford Biodesign: Chest Brace Pressure Measurement Device — Jan 2018 - Jun 2018
- Built an Arduino-based real-time pressure monitoring system mounted on a chest brace for pediatric surgeons studying new ways to treat Pectus carinatum
- Mentoring Stanford undergraduate student continuing the project in preparation for clinical user studies

Pharmascope: NFC Medication Tracking Sep 2017
- Wrote Android application to use low-cost NFC tags for unit-dose medication tracking in hospital settings
- Collaborated with pharmacy student, software engineer, and data scientist

GRIT: Handshake-triggered Graduation Cap Light Show Apr 2017 - May 2017
- Mounted LEDs and photoresistor and coded LilyPad Arduino to start light show upon handshakes

VEPi: Low-cost EEG Instrumentation Jan 2017 - May 2017
- Implemented a visual evoked potential measurement device on a Raspberry Pi with a 24-bit ADC
- Designed and prototyped a custom PCB with EAGLE and Othermill Pro PCB maker
- Results verified by Dr. Henry G. Rylander, ophthalmologist and research scientist

Smack: Smart Bike Rack Aug 2016 - May 2017
- Created a smart bike rack with TI MSP432, custom PCBs, 3D printed locks, and web interface
- Wrote business plan and pitched concept at campus venues

buDDy: Breathalyzer Lock Box Aug 2016 - Dec 2016
- Built a WiFi integrated box that holds user's keys; unlocks only if user passes a breathalyzer test
- Implemented with TI TM4C123 microcontroller, TI CC3100 SimpleLink WiFi, gas sensor, and custom PCB

SketchMagik: Tracking Childhood Development Sep 2016
- Created a mobile application in 36 hours to collect data on childhood cognitive and fine motor skill development

SWATeam: Quantifying the Spread of Zika Aug 2016
- Coded a mobile application in 48 hours to gamify collection of mosquito data for youth in communities where Zika virus is prevalent and process the data to determine risk level for disease
- Presented concept at the Center for Disease Control and Prevention in Atlanta

Got Your Back: Smart Backrest Jun 2015 - Aug 2015
- Invented an IoT backrest that monitors ergonomics using TI microcontrollers and IBM Bluemix NodeRed

Activities & Service

Stanford Science PenPals, Mentor Sep 2017 - Present
- Writing letters throughout the school year encouraging a high school student in Texas to pursue a STEM career

Peninsula Bible Church, Middle School Ministry Leader Sep 2017 - Present
- Leading small group discussions and teaching Bible passages to youth group of forty students

Help One Child, Events Volunteer Aug 2017 - Present
- Providing childcare at various events, such as foster family support meetings, Easter and Christmas parties, etc.

Menlo-Atherton High School, Mentor Sep 2017 - Jun 2018
- Met regularly with tenth grade student from low-income background to provide education and career support

Johns Hopkins MedHacks, Campus Ambassador Aug 2017 - Sep 2017
- Advocated for medical technology-oriented hacking among tech community at Stanford

Cru Indigitous #Hack, Hackathon Director Apr 2016 - Nov 2016
- Collaborated with a global team to host a hackathon running in 27+ cities simultaneously

InterVarsity Campus Fellowship, Small Group Leader Aug 2015 - May 2016
- Led weekly small group discussions and community service projects

Boy Scouts of America, National Youth Leadership Training Staff Mar 2012 - Jul 2015
- Staffed week-long sessions of fifty youth leaders six times, including once as senior course leader
- Led staff developments, prepared logistics, and taught topics including: SMART goals, conflict resolution, team development, servant leadership, creative problem solving

Honors & Awards

Eagle Scout
2017 Johns Hopkins MedHacks Top 8 (out of 98 teams)
2017 UT ECE Senior Design 1st Place in Honors/Entrepreneurial (out of 42 teams)
2016 Embedded Systems Design Competition 1st Place (out of 40 teams)
2016 Johns Hopkins MedHacks Top 5 (out of 46 teams)
2016 Johns Hopkins MedHacks Texas Medical Center Innovation Prize
2016 GE Above & Beyond Bronze Award
2016 Texas A&M Innovate Against Zika 1st Place (out of 6 teams)
2016 START Hack Swisscom Challenge Award
2015 David L. Chen Endowed Study Abroad Scholarship in Engineering
2015 Charles W. Tolbert Endowed Presidential Scholarship
2015 Texas Instruments Intern Design Challenge People's Choice Award
2014 Intel International Science & Engineering Fair 3rd Place in Computer Science
2014 Texas Christian University Values & Ventures Business Plan Competition Founder's Award
2014 University of North Texas Sherman & Barsanti Inspiration Award Runner-up