SERENA CHAN

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EDUCATION

University of Massachusetts Amherst, Commonwealth Honors College • Amherst, MA May 2021
- Bachelor of Science in Computer Science, Mathematics GPA: 4.0
- Relevant Coursework: CS Honors Independent Study in Time-Optimized Control Systems (in progress), Statistics I (in progress), Systematic & Functional Programming (in progress), Discrete Math & Proofs (in progress), Introduction to Scientific Computing (in progress), Data Structures & Algorithms, Complex Variables, Physics: Mechanics

Deerfield Academy, *cum laude* • Deerfield, MA May 2017
- Relevant Coursework: Projects in Computer Science & Digital Logic, Robotics, Linear Algebra, Multivariable Calculus & Differential Equations GPA: 93/100

WORK EXPERIENCE

Research Intern • University of Connecticut Jun 2016 – Feb 2017
- First author of paper submitted to MobileHCI 2017 – *Towards a Low-cost User-friendly Brain-Computer Interface for Smart Environments and Text Input;* supervised by Dr. Han Song (University of Connecticut)
- Designed low-fatigue, low-latency Chinese input system with brainwave signals collected from EEG headsets targeting the disabled
- Achieved >92% predictive accuracy using an SVM classifier and real-time FFT-based data processing routine

PROJECTS

S1REN: Emergency Response System Jan 2018 – Present
Best Disaster Relief Hack, SheHacks Boston 2018
- Created a low-latency, real-time social media based emergency response system targeting first responders during emergencies
- Outlined and implemented tweet data processing routine; created web API and sockets for real-time database monitoring
- Created text and location extractor using social triangulation and analysis of open-source data from Hurricane Sandy and Harvey

SharkFin: Personal Finance Manager Dec 2017
JPMorgan Chase: Finance of the Future & Viacom Challenge Winner; Intuit & Google Challenge Finalist, YHack2017
- Designed a finance habit tracker web application that utilizes statistical models to detect healthy or unhealthy spending and suggests alternative cheaper items from online and local retailers
- Built recurrence-identifying statistical models and implemented underlying data structures to process purchases
- Utilized keyword tagging and bank APIs to categorize purchases as healthy or harmful habits

Pluto: Remote Door Security System Nov 2017
Grand Prize Winner & Lutron Sponsor Challenge Finalist, HackUMass V
- Created a smart door monitoring system utilizing machine learning to identify faces as friends or strangers upon knocks and notifies the user real-time from an Android application
- Designed knock detection algorithm and custom signal normalizer & debouncer on an FPGA
- Helped implement facial recognition and identity classification routine using AWS and Python

Mini Roomba Apr 2017 – May 2017
- Designed a smart vacuum cleaner with a budget of $100 based on the Roomba controlled by an Arduino
- Utilized AutoDesk software and 3D printing to design and produce all essential mobile parts
- Developed intelligent collision detection algorithm based on data from ultrasonic, optic and tactile sensors

ACTIVITIES

Director in Training • HackUMass VI Jan 2018 – Present
- Assisting and overseeing all divisions; leading individual teams in various tasks and attending leadership meetings as necessary

Co-Chair • Women in Computer Science at UMass (WiCS @ UMass) Sep 2017 – Present
- Organizing and leading monthly events and workshops for the women and non-binary community; planning new events and creation of "female in STEM" network on campus

Founder & Co-head • Deerfield Programming Club & Capture-the-Flag (CTF) Team Sep 2015 – May 2017
- Hosted a platform for project ideas by leading workshops and mini hackathons on software and game development skills
- Organized CTF training and participated in multiple contests; tutored AP CS students by hosting regular coding clinics

Programming Co-head, R&D Head • Deerfield Robotics Team Sep 2015 – May 2017
- Created custom modular algorithm design system; implemented the robot's autonomous algorithm used in competitions
- Co-founded a medium-scale robotics competition for nearby middle schools and beginners in high school
- Held FTC training sessions in engineering, coding and project management; grew robotics program to over 4 times its original size

SKILLS

Languages: Java, Python, C++, Swift, Android, Wolfram Language, HTML/CSS, JavaScript, Scala, MATLAB
Technologies: Field-Programmable Gate Arrays (FPGA), Verilog HDL, Arduino, Git, LaTeX, Firebase, CAD, Node.js, Django
Operating Systems: Windows, OS X, Unix/Linux