Bryant Huang

bryanthuang8@gmail.com | bh46@rice.edu | (626) 353-0203

Education

Rice University - B.S. in Electrical and Computer Engineering, 2021-2025, 3.26 GPA
Gretchen Whitney High School - 2017-2021, Valedictorian, 3.98 GPA

Relevant coursework

Random Signals in EE Systems, Wireless Integrated Circuits, Digital Logic Design, Signals & Systems & Transforms, EE Fundamentals, Intro to Physical Electronics 1 & 2, Analog Circuits Lab, Java OOP, Intro to Python, Algorithms & Discrete Math, Intro to Computer Engineering, Multivariable Calculus, Linear Algebra, Electricity & Magnetism, First Year Japanese, Second Year Japanese, Business for Entrepreneurs

Relevant experience

I have ACTIVE Secret Clearance

Northrop Grumman - Hardware Engineer Intern (May 2023 - July 2023)
- Researched components and assembled them in laser alignment set up
- Utilized oscilloscopes to test output signals in fiber optic laser system for quantum sensing
- Drew electrical wiring diagrams in Visio illustrating signals entering and exiting test connectors for PCB and verified production accuracy in the lab
- Compiled a large bill of materials for various projects in Excel and found parts that meet design requirements
- Calculated overall power consumption and illustrated voltage distribution for radio frequency PCB discs
- Used Cadence Virtuoso to verify and complete electrical schematic design

Rice University - Chen Research Group Undergraduate Researcher (August 2023 - Present)
- Researching ways to create quantum networks for secure communication
- Working with electro optic modulators and acousto optic modulators to adjust laser characteristics for precise photon detection

Rice University - NSF REU Undergraduate Researcher (May 2022 - May 2023)
- Collaborated with a team of undergraduates under Professor Joseph Young to create a novel person identification neural network model that uses less memory and doesn't require retraining the entire model when shown domains with new people
- Model pre-trains on person silhouettes and full color images, then re-trains on domain specific pictures to obtain layers of training and experience, resulting in accurate identification rates of 80+%
- Created Python scripts that
    1) Take datasets of pictures and applies a pretrained ResNet-50 machine learning model from Pytorch to apply segmentation on input images and obtain person silhouettes
    2) Take input vectors representing people, search for the most similar vectors in memory in O(1) time, and update vector to improve representation of person or add person to database
- Read research papers, broke down their complex concepts in documentation for future researchers
- Operated and maintained an autonomous drone using lua scripts, an embedded language, and the Ardupilot environment, a software suite
- Presented work at 2022 Smalley-Curl Research Symposium to professors and industry professionals

First Tech Challenge Robotics Team 542 (September 2018 - August 2021)
Team Captain (2020-2021), Outtake subsystem head (2019-2020), Builder (2018-2019)
- Captained team to advance to Houston World Championships in 2020-2021 season
- Coached new members about engineering design and CAD, oversaw robot design, and reached World Championships 3 times
- Researched many different online vendors to find optimal parts for our robot given limited budget
- Coordinated major robot redesign, stayed up late and worked overtime to rebuild the robot's disk

shooting mechanism to make it more robust and accurate, thus scoring more points overall
● Led hardware subteam to CAD, prototype, and construct a mechanism with 3-D printing and CNC manufacturing that efficiently and consistently picks up and stacks plastic blocks, leading to success at local meets and Regional competitions
● Volunteered for various community outreach events at local schools and libraries
● Won Inspire 2nd and 3rd (for best in overall categories), Think Award (for best engineering notebook), Control Award (for best software design) at LA Regional Championships

HackRice - Hacker (September 2022)
● Collaborated with a team of students to create an Android app using Android Studio that displays servery wait times, a graph of estimated future wait times according to our algorithm and past data, and an automatically updating menu of the day with pictures of each food item
● Designed UI using Java and implemented multithreading to continuously update servery wait time based on parsed input data

Boeing - High School Summer Intern (June 2020 - August 2020)
● Coordinated a 13-person team to design an affordable, unmanned, autonomous, underwater vehicle (UUV) system that comprised of a Mothership (stayed near surface) and XSUUV (explored ocean floor)
● Responsible for choosing and integrating the sensors and communications on the Mothership
● Headed another team of 6 interns for organizing intern teaching and networking events, created a website and videos to teach kids about STEM, and designed an innovative, inexpensive approach for cleaning oil spills by using recycled cotton textiles and an eco-friendly hydrophobic coating

University of Southern California - SHINE Researcher (Summer 2019)
● Worked in Professor Francisco Valero-Cuevas' Brain-Body Dynamics Lab under Mr. Dario Urbina-Melendez using Fusion 360 to design and construct a gantry system that supports a groundbreaking tendon-driven quadruped that uses much less energy as it learns to walk using machine learning algorithms

Whitney Stock Exchange - Co-founder and Co-president (2017-2021)
● Created and led presentations teaching personal finance and explaining how current events affect the markets to students
● Hosted stock market simulation competitions to give students a venue to apply their knowledge and learn about trading strategies in the current market without risking real money
● Competed in the University of Pennsylvania Online Trading Investing Simulation competition and won 6th place in national rankings

Activities
Rice Escape, Rice Motorsports, HackRice, Rice IEEE, Rice BASYK Dance Club, McMurtry College Culinary Committee

Skills
Computer skills: Python, Java, Git, National Instruments VirtualBench, Keysight Advanced Design System, LTspice, Bash, MATLAB, SolidWorks CAD, Fusion 360, Cadence, Visio, Excel, LaTeX, iVerilog, Xilinx Vivado
Technical skills: Oscilloscopes, analog circuitry, laser tuning, 3-D printing, CNC manufacturing, soldering, digital multimeter, power tools
Language skills: Mandarin Chinese, Japanese, Cantonese