Brair Tilboon Elberier

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Education

University of Washington, Seattle WA.
Bachelor of Science, Electrical and Computer Engineering *(Major GPA: 3.6)* **September 2017-Present**

- *Dual Concentration* | Embedded Computing Systems, Digital VLSI
- *Coursework* | Embedded Systems Design, Very Large-Scale Integrated Design I-II, Computer Architecture I-II, Data Structures Algorithms, Machine Learning, Systems Programming, Hardware/Software Interface, Design of Digital Circuits and Systems I-II, Devices and Circuits I-II, Linux Development, Continuous/Discrete Time Linear Systems

Qualifications

Programming Language: Java, C, C++, C#, System Verilog, Python, Swift, SQL, HSpice, Bash, Assembly language
Engineering Platforms: Arduino, Cadence Virtuoso, RaspberryPi, ModelSim, Verilog, InVision, LTSpice, Unity, Git

Teaching Experience

University of Washington, *Paul G. Allen School of Computer Science*

- Design of Digital Circuits and Systems (CSE371) | Intermediate course on digital design and verification on FPGA's
- Introduction to Digital Design (CSE369) | Introductory course on logic design concepts, state machines, and FPGA's

University of Washington, *Department of Electrical and Computer Engineering*

- Advanced Technical Communications (EE393) | Course on relevant industry technical communication skills
- The University Community (GENST199) | Led thirty engineering undergrad students in their transition to college

Seattle Public Schools, *Rainier Beach Washington*

- Introductory Embedded Systems Teacher | Arduino, python, and circuitry for underrepresented high school students

Relevant Experience

Autonomous Insect Robotics Lab, University of Washington. **December 2021 - Present**
Embedded Systems Engineer, Undergraduate Research Assistant

- Designed embedded, battery free, wireless gliding sensor nodes, with an origami body triggered by wireless actuators
- Setup the embedded environment to program the onboard Nordic nRF52 through Arduino ide bootloader
- Wrote and tested embedded code for sensors and wireless data collection to implement low power/Bluetooth settings

Dialog Semiconductor, Santa Clara CA. **June 2021 – October 2021**
Applications Engineer, Intern

- Designed digital circuitry to integrate system functions into a single custom circuit, for minimized power consumption
- Designed, tested, and documented 4-bit chainable binary counter using GPAK designer to customer specification
- Designed, tested, and documented multi-purpose chainable analog-to-digital converter to customer specifications

Center for Information Assurance and Cybersecurity, University of Washington **June 2021 - Present**
Computer Engineer, Capstone

- Designed, developed, and tested 4 Wi-Fi enabled stair climbing robots to compete in robotic hacking competition
- Programed pulse width modulated motor controls in python compatible with raspberryPi multicontroller
- Designed consolidated and regulated power delivery system for electronics requiring various source voltages

Projects

ARM CPU Design

- Designed logic for a pipelined 5-cycle CPU in SystemVerilog using ARM ISA targeted for an Altera FPGA
- Wrote unit-level test benches to verify the CPU throughout development using ModelSim waveform viewer

Arithmetic Logic Unit Physical Design

- Micron design contest winner for fastest five operation ALU schematic and layout design using Cadence Virtuoso
- Used HSPICE to simulate and optimize design, and DRC, LVS to verify design functionality

Extracurricular Awards and Activities

Curriculum Committee Representative, Department Electrical & Computer Engineering **September 2021-Present**
Boeing Emerging Leader Scholarship, UW College of Engineering **August 2021**
Kenneth and Sylvia Steen Endowed Scholarship, Department Electrical & Computer Engineering **August 2021**
Lawrence & Lucille Frey Endowed Scholarship, Department Electrical & Computer Engineering **August 2021**
Arthur Burman Winter Endowed Scholarship, Department Electrical & Computer Engineering **July 2020**
National Action Council for Minorities in Engineering Scholarship, College of Engineering **June 2020**