

# Matthew L. Trang

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## EDUCATION

### B.S. Computer Engineering

Virginia Tech, Blacksburg, VA

GPA: 3.97, Honors College

Expected Grad May 2022

### Patriot High School, Nokesville, VA

GPA: 4.909/4.0, Summa Cum Laude, Class Rank: 1st out of 706

Jun 2018

## COMPUTER SKILLS

- |                  |                       |           |
|------------------|-----------------------|-----------|
| • Java           | • C/C++               | • Python  |
| • MATLAB         | • Arduino             | • AutoCAD |
| • Linux (Ubuntu) | • Xilinx SDSoC/Vivado | • QNX     |
| • ROS            | • Raspberry Pi        | • HTML    |

## RELEVANT EXPERIENCES

### Space and Defense Co-op, Moog Inc.

May 2019 – Aug 2019

- Led Computer Vision research at Moog Blacksburg on Xilinx FPGA using SDSoC and MATLAB HDL Coder
- Programmed multiple CV algorithms such as a Harris Corner Detector that runs 500x faster on hardware

### Software Integration Team Member, Victor Tango AutoDrive, Virginia Tech

Nov 2018 – Present

- Collaborate with 30+ team members on cross-functional team to design a fully autonomous vehicle
- Integrate localization and IMU sensors with communications network to dictate vehicle movement

### Design Lead, Team Juvo Source America, Virginia Tech

Sep 2018 – Present

- Designed and built a Wearable Mouse Band to assist a disabled student in utilizing his computer
- Improved computer navigation speeds of the student user by 30% and accurate click rate by 80%

### Outreach Head, Electrical Team, InVenTs Rocketry, Virginia Tech

Sep 2018 – Aug 2019

- Programmed Avionics Bay for rocket in NASA's Space Grant Midwest High-Power Rocket Competition
- Coordinated community educational activities at local elementary school to spread STEM interest

### Research Assistant, GMU - Institute for Advanced Biomedical Research

Jul 2018 – Sep 2018

- Constructed testing device for stretch and flex sensor calibration for medical joint monitoring invention
- Tested human walking patterns using variable resistance sensors to explore motion classification

## PATENTS

### Patent No. 62/717,211

Aug 2018

- "Blockchain System Storage and Block Encryption for Securing Learning Semantic and Episodic Events". Provisional Patent. Status: Filed

### Patent No. 62/576,361

Oct 2017

- "Non-Invasive Wearable Biomechanical and Physiology Monitor for Injury Prevention and Rehabilitation". Provisional Patent. Status: Filed. Utility Patent Filed: October 24<sup>th</sup>, 2018

## HONORS & AWARDS

- |   |          |
|---|----------|
| • 1 <sup>st</sup> Place, National SourceAmerica Design Challenge, SourceAmerica | Jun 2019 |
| • Pamplin Scholar Award, Virginia Tech  | Mar 2019 |
| • 8 <sup>th</sup> Place, VEX Robotics World Championship, VEX Robotics          | Apr 2018 |
| • Summit Finalist, Conrad Spirit of Innovation Challenge, Conrad Foundation     | Feb 2018 |
| • National Merit Scholar, National Merit Scholarship Corporation                | Feb 2018 |
| • VA-11 Winner, Congressional App Challenge, Congressional App Challenge        | Dec 2017 |