


Japnit Singh Sethi, E.I.T.

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EDUCATION

Master of Engineering in Computer Engineering **May 2021**
Focus Area: Software, Controls, and Machine Intelligence
Virginia Polytechnic Institute and State University *Blacksburg, VA*

Bachelor of Science in Mechanical Engineering **May 2019**
Virginia Polytechnic Institute and State University *Blacksburg, VA*

TECHNICAL SKILLS

- **Programming Languages:** C/C++, MATLAB, Python
- **Softwares:** SolidWorks, Siemens NX, ANSYS, KiCad
- **Robotics:** ROS, Sensor Integration
- **Mechanical:** FEA, Prototyping, Soldering, 3D Printing, Basic Machine Shop Skills

WORK EXPERIENCE

The Advanced Control Systems Lab **Blacksburg, VA**
Graduate Researcher *August 2020 - May 2021*

- Implemented a passivity based adaptive controller for 5-DOF robotic arm in **MATLAB**
- Conducted simulation tests to deduce a 59.2% computationally faster way of capturing parametric uncertainties
- Derived equations of motion to capture parametric uncertainties in 2-DOF, 3-DOF, and 5-DOF robotic arm

TMEIC **Roanoke, VA**
Systems Engineering Intern *May 2020 - Aug 2020*

- Created a complete functional document on RTG's to reduce onboarding time for 44% of TMEIC employees
- Provided an algorithmic structure to the **C++** source code of EGD networking protocol for **Mitsubishi PLC**

Autonomous Systems and Controls Lab **Blacksburg, VA**
Graduate Research Assistant *July 2019 - Dec 2019*

- Optimized AUV state-space model for improved prediction of pitch and yaw axis data using **MATLAB**
- Assembled, calibrated and operated AUV for field trials with a 60% success rate

Assistive Robotics Lab **Blacksburg, VA**
Undergraduate Researcher *May 2018 - August 2018*

- Created 3D CAD models of 15+ Exo-suit components using **Siemens NX** for ease of manufacturing
- Machined 8 soft goods and upper frame prototypes, resulting in favorable response from 3 product testers

VVF LLC **Kansas City, KS**
Engineering Intern *May 2016 - August 2016*

- Improved week over week soap packaging efficiency by 18.5% by troubleshooting automated packaging line
- Created OSHA compliant directional flow maps for 15 pumps in the soap production facility

PROJECTS

AgBOT (Agriculture Autonomous Robot) *August 2018 - May 2019*

- Won **first place** in AgBot Mining for Microbes and Micro-fauna competition against **20 international teams**
- Led storage and filtration sub-team from ideation to completion using custom verification and validation plans
- Designed 15+ CAD models with explosion drawings and assembly animations in **Siemens NX**

Semi-Autonomous Underground Vehicle *January 2019 - May 2019*

- Delivered food items using semi-AUV by implementing **ROS** software packages with 9% time to spare
- Debugged and implemented ROS packages for 2D, 3D SLAM, and motor control in **C++**
- Built **robotic system level design** to explain hardware & software architecture of the semi-AUV

LEADERSHIP, AWARDS AND CERTIFICATIONS

- International Undergraduate Speaker for Class of 2019 (**out of 1152 students**) *April 2020 - Present*
- Advanced C++ (Udemy) # UC-4709f761 *May 2020 - Present*
- Learning PLC Ladder Logic (LinkedIn Learning) *July 2019 - Present*
- Certified SolidWorks Associate (Dassault Systemes) *July 2019 - Present*
- Engineer in Training **Mechanical** # 0420072322 *July 2019 - Present*