

**PROFESSIONAL SUMMARY**

- Mechanical design engineer with detail-oriented design experience in industry and research environments, focusing in robotics
- Passionate about innovative projects, and excited to work on collaborative teams toward a common goal

**WORK EXPERIENCE****Valcor Engineering Corp. - Springfield, NJ****Design Engineer****April 2021 – present**

- Developed designs and performed analyses for space and aircraft pneumatically actuated and solenoid actuated valves
- Performed in-house development testing and worked closely with test house on-site for qualification testing (vibe, thermal)
- Wrote test, assembly, cleaning, and qualification procedures
- Provided weekly updates and communicated regularly with customers, including for Critical Design Review (CDR)

**Honeybee Robotics - Brooklyn, NY****Mechanical Engineer II / Project Engineer****August 2015 – August 2016; June 2018 – February 2021**

- Designed, produced shop-quality drawings for outside fabrication, and precision machined (assembly runout within 0.005”) mechanical components of an early-stage spacecraft prototype actuation mechanism for NASA contract
- Produced CAD and conducted a risk study for a solar array drive actuator proposal, yielding a multi-million dollar contract
- Modified existing brain surgical tool prototypes for testing, media content generation, and further development
- Modeled and built “vision module” housing for various electronic components (cameras, NVIDIA Jetson, custom boards), utilized for navigation and inspection on a pipe crawling robot, and leveraged for separate successful contract bid
- Contributed to drill string fab and wiring assembly design of TRIDENT drill for VIPER and PRIME-1 lunar missions

**RESEARCH EXPERIENCE****Carnegie Mellon University, Robotics Institute - Pittsburgh, PA****Graduate Research Assistant / Teacher’s Assistant – CubeRover****August 2017 – May 2018**

- Prototyped and tested a 2-kg lunar rover for a Phase I NASA SBIR with ~20 students and industry partner, Astrobotic
- Facilitated communication, set high level goals/timeline, tracked budget (mass, power, cost), as systems engineering team lead
- Awarded \$750,000 Phase II contract

**Research Assistant – Automated Nuclear Pipe Inspection Robot****May 2017 – Sept 2017**

- Invented and deployed a novel robot alongside ~20 members in 4 months for the DOE to detect uranium to mm-precision
- Designed mechanisms: wheel modules to propel robot inside pipe, and sensor rotation module to actuate sensor disk

**EDUCATION****Carnegie Mellon University - Pittsburgh, PA****Graduation: May 2018**

- Master of Science, Mechanical Engineering, GPA 3.7

**The Cooper Union for the Advancement of Science and Art – Manhattan, NY****Graduation: June 2015**

- Bachelor of Engineering, Mechanical Engineering, GPA 3.5
- Full-tuition scholarship, Cum Laude

**PUBLICATIONS & ABSTRACTS**

- Hsiung, J., **Tallaksen, A.**, Papincak, L., et al. “Localized Imaging and Mapping for Underwater Fuel Storage Basins,” in *Proceedings of the Symposium on Waste Management*, Phoenix, Arizona, Mar. 2018
- Papincak, L., Jones, H., ... , **Tallaksen, A.**, et. al., “Robotic Measurement of Holdup Deposit Volume in Gaseous Diffusion Piping to Quantify U-235 Content,” in *Proceedings of the Symposium on Waste Management*, Phoenix, Arizona, Mar. 2018
- **Tallaksen, A.**, et. al. “CubeRovers for Lunar Exploration,” in *Annual Meeting of the Lunar Exploration and Analysis Group (LEAG) Poster Abstract*, Columbia, MD, Oct. 2017.

**SKILLS**

Proficient to Intermediate: SolidWorks, Inventor, MATLAB, Machining (Lathe, Mill, 3D Printer, Hand Tools)

Intermediate to Beginner: C/C++, Python, Arduino, Raspberry Pi, Soldering, Breadboarding, ANSYS, Mastercam