LEVI WILLMETH

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LIFE & CAREER GOALS

I am a father, husband, and undergraduate student. I spend my mornings in class, my afternoons with my two little girls, and many of my nights developing software or tinkering with personal electronics projects. I also enjoy spending time outdoors while riding to campus, playing bike polo, or flying UAVs.

I have a deep enthusiasm and love for aerospace projects. It's very exciting and humbling to contribute some small piece to the very complex puzzles we call spacecraft. Knowing that I helped create something that will leave our little blue marble and fly out into that inky void, just lights me up inside.

My ideal job is to someday develop machine learning or computer vision software for use on spacecraft where constant real-time contact is impractical or impossible. I want to write software to help automate the process of mining asteroids, automatically choose the safest route through a boulder field on Mars, or continually adjust a deep space probe's antenna angle to find the optimal reception. I grew up reading Sci-Fi authors like Isaac Asimov, who knew technology would someday rise above just dumb machines. I believe I will see that paradigm shift in my lifetime, and I want to be a part of it.

EDUCATION

Oregon State University June 2016 - Present
Scheduled graduation June 2018. OSU GPA: 3.81

Linn-Benton Community College June 2013 - June 2016
Associates in Computer Science - Systems LBCC GPA: 3.86

TECHNICAL SKILLS

Python, Java, C, C++, Ruby, Linux, Git, Unit Testing, LaTeX, Chef, ChefSpec
Learning Rust, actively practicing and improving my Python and C++

WORK EXPERIENCE

NASA IV&V Core Flight System Drone Project 2017
Summer Intern

- Worked with my mentor to port NASAs Core Flight System software onto hobby UAVs.
- Used Linux, layers of networking, an API, and C++ to control UAVs over WiFi using custom GUI.
- Wrote algorithm to smooth out control movements, send combinations or queue several commands.
- Learned about development practices and standards at NASA.

Open Source Lab 2016 - 2017
Student Developer

- Began as a summer intern, later invited to continue as a part-time student developer.
- Learned a LOT of new material including Linux system administration, Docker containers, and Ruby.
- Primarily a DevOps role, initially writing ServerSpec and ChefSpec unit tests, then my own Chef recipes.
- Worked with Git and GitHub in a peer review environment, both reviewing and justifying all pull requests.
- Participated in weekly sprint meetings to determine task priorities and estimate how long work will take.

EXTRACURRICULAR PROJECTS

High Altitude Balloon during the 2017 Eclipse 2016 - 2017
OSU/LBCC Space Team Manager, and Software Lead

- Developed a high altitude balloon payload to live stream the 2017 eclipse from 90k ft above Oregon.
- Managed a team of almost 30 excited college students across both OSU and Linn-Benton CC.
- Initiated outreach to 30+ additional students from Silverton High School and Oregon Coastal CC.
- Introduced git for version control and to establish a legacy of software for future team members.
- Wrote and managed development of software on microcontrollers through raspberry pi's and laptops.

Gamma Ray Polarimeter, RockSat-C 2016 2015 - 2016
Lead Software Developer

- Proposed and helped scientifically develop a gamma ray polarimeter experiment for a sounding rocket.
- Wrote timing-critical C to sample 12 analog and directionally sensor gamma detectors and an IMU.
- Analyzed flight results in Python to find trends while accounting for the 5 Hz rotation of the rocket.
- Learned how to accept and learn from our mistakes with humility, re-learned the importance of schedules.

Cosmic Ray Detector, RockSat-C 2015 2014 - 2015
Lead Software Developer

- Helped develop experiment using 6 Geiger-Muller tubes and coincidence gate to detect cosmic radiation.
- Worked on every aspect from initial design, PCB layout, assembly, to writing the embedded software.
- Learned how to work on a team, utilize each other's skills and knowledge, and to follow a work schedule.

Bike Polo Digital Scoreboard 2017
Just-for-fun project

- Designed and built an electronic scoreboard to keep score while playing bike polo. (Hockey on bikes.)
- A micro controller sends 5v signals to a pair of shift registers, which drive 14 led strips at 12v.
- Large, friendly buttons increment the score. Leds blink when someone wins or the game timer expires.
- Improved my design 3 times using different components, cleaner wiring, and smaller pcb layouts.

PRESENTATIONS

Willmeth, L. & Wimer, J. (2017, August). Core Flight System Drone Project. NASA Student Symposium, Washington, DC.

Willmeth, L. & Le Brun Colon, D. (2016, November). Gamma ray polarimeter. Annual Oregon Space Grant Consortium Student Symposium, Corvallis, OR.

Willmeth, L., Le Brun Colon, D., LeChevallier, P., Blumer, & J. Cruse, C. (2016, June). Gamma ray polarimeter. RockSat-C 2016, Wallops Flight Facility, VA.

Betz, H., Willmeth, L., Le Brun Colon, D., & Stroh, A. (2015, November). RockSat-C 2015 - Cosmic ray detector. Annual Oregon Space Grant Consortium Student Symposium, Corvallis, OR.

Willmeth, L. & Molden, J.P. (2015, November). RockSat-C 2015 Cosmic ray detector. Annual Oregon Space Grant Consortium Student Symposium, Corvallis, OR.

Willmeth, L. & Le Brun Colon, D. (2015, September). RockSat-C 2015 Cosmic ray detector. Oregon NASA Space Grant Consortium Affiliate Meeting, McMinneVille, OR.

Betz, H., Willmeth, L., Molden, J.P., Stroh, A., Beckwith, A., Blench, S. & Le Brun Colon, D. (2015, June). Cosmic ray detector. RockSat-C 2015, Wallops Flight Facility, VA.