JonathanMash

contact

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education

Queen's University
2009 – 2013
M.Sc. in Electrical Eng.
Queen's Centre for Energy and Power Electronics Research
Thesis: Advanced Nonlinear Control Techniques for Wind Energy Conversions Systems
Course Avg: 92%

2004 – 2009
B.Sc. in Electrical Eng.
2nd/45 in Elec. Eng.
5th/576 in all Eng.
Final Year Avg: 93%

design tools

⋆Altium, Mentor Xpedition, Matlab, PSIM, SIWave, Visual Studio, ⋆Git/GitHub

programming

⋆Python, ⋆C/C++, Javascript, HTML5, CSS3, MySQL, Linux.

interests

Family, ⋆3D Printing, ⋆Woodworking, Electronics, Multirotor Drones, Solar Power Systems, Microcontrollers.

awards

2010 – *Ontario Graduate Scholarship*

2009 – *NSERC - Alexander Graham Bell Canada Graduate Scholarships*

skills

core: leadership, team & project management, problem solving, effective communication.
electronics: product development, system design, requirements, hardware/firmware interfaces.
hardware: pcb design, simulation, assembly & rework, testing & debugging, DfX.
firmware: specifications, design, programming, testing & debugging, deployment.

experience

2020 – Present
Amazon Project Kuiper — Seattle, WA, USA
Hardware Development Manager - Avionics and Endpoints

- Recruited, trained, and managed a cross-functional team of over 14 electrical, system, and SI/PI engineers. Completed over 270 interviews at Amazon.
- Team lead and manager of the satellite Avionics & Bus Endpoints Team. Owner of flight computer, vehicle-wide communication bus, magnetometer, sun sensor, magnetorquers, propulsion control unit, solar array deployment unit, cameras, and more. Contributed to power distribution, ground communication systems, star tracker, phased array antennas and reaction wheels.
- Responsible for all aspects of the hardware design. Architecture, requirements, development, testing, and qualification of hardware. Liaison between the Design Engineering team and the Systems, Reliability, Hardware Test, and Manufacturing Engineering teams.
- Maintained consistent and clear communication up the management chain. Maintained and drove closure on schedule and schedule mitigation. Owner of multi-million dollar development budget.

2016 – 2020
Amazon Prime Air — Seattle, WA, USA
Hardware Development Manager - Aircraft Electronics

- Recruited, trained, and managed a cross-functional team of electrical, mechanical, system, and support engineers.
- Managed org-wide electrical engineering support resources, including component librarian services, Altium ECAD administration, design standards documentation, and quality & reliability processes/workflows.
- Oversaw the requirements derivation, development, testing, and qualification of key Avionics subsystems. Liaison between the Design Engineering team and the Systems, Reliability, Hardware Test, and Manufacturing Engineering teams.

Sr. Hardware Development Engineer

- Owner/designer of several vehicle subsystems such as vehicle power distribution, multiple sensor systems, and ground station equipment.
- Supported the integration of Avionics subsystems into the vehicle. Developed installation checklists and provided on-call support to flight ops.
- Liaison between engineering teams to ensure that hardware designs maximize the efficiency of firmware development. Examples include boundary scan, standardized debug interface & indicators, and consistent pinout.
- Managed an external vendor relationship to develop a custom product to reduce the size, weight, and power consumption of the power regulation subsystem.

Hardware Development Engineer

- Oversaw the entire hardware process from design through to manufacturing: Component selection, PCB design, prototypes, and testing.
- Developed manufacturing, assembly, and testing procedures to ensure that high quality products are delivered to the vehicle program.
- Produced a standardized set of design artifacts for use across vehicle subsystems, ensuring consistent quality and reliability for Avionics hardware.
- Firmware development for a RF radio link to the ground. Developed a BSP package and drivers for the common vehicle microcontroller. Planning and development of unit, regression, and integration tests.