Thomas Lin

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Engineering Experience

Software Developer & Avionics Software Team Lead *(SpaceRyde)* *Nov. '21 – Present*

- Led the design of flight vehicle avionics software, involving requirements formulation, component sourcing & validation, architectural design & layout, and integration & iterative testing
- Develop a suite of Linux-based embedded drivers for a ROS2-based avionics software stack, interfacing with peripherals that communicate over UART, CAN, I2C, and TCP/IP
- Design networking solution for a multi-stage vehicle stack, and for groundstation-to-vehicle tracking, telemetry, and command (TT&C)

Infrastructure Testbed Developer & SysAdmin *(SAVI Network)* *May '12 – Oct. '21*

- Developed a cloud infrastructure control and management framework based on software-defined infrastructure; unified heterogeneous infrastructure telemetry using open-source software
- Extended OpenStack to support virtualized GPUs, FPGAs, SDRs, and Wi-Fi resources
- Supported operations and maintenance of the Canada-wide SAVI testbed; administered clusters of servers; configured and programmed network devices; and wired datacentres
- Supported students and researchers in designing and implementing novel experiments involving cloud orchestration, software-defined networking, network function virtualization, and 5G slicing

Network Software Developer *(StreamWorx.AI)* *May '21 – Sept. '21*

- Collaborated with a small team, leading initial client requirements analysis, and performing exploratory research on client's tech stack to determine what is possible
- Developed a multi-layer (physical, virtual, application) network & compute telemetry framework, for a client's edge-networking product, using open-source tools
- Developed & deployed ingestion processors for real-time data pipelines and analytic dashboards

Multimedia Software Engineering Intern *(Qualcomm Canada)* *May '09 – Aug. '10*

- Developed and maintained the user-space layers for a video processing driver
- Implemented a flexible OMX-based test application for regression testing
- Maintained and debugged build issues to ensure error-free code releases
- Supported out-of-country integration teams with issues relating to the latest video driver release

Technical Skills

Programming & Scripting Languages

- Frequently used: C/C++, Python, Go, Bash scripting
- Used in past/side projects: Node.js, Java, CUDA-C
- Web development: HTML5 & JavaScript, Flask framework
- Databases: SQL (and derivatives) & PromQL

Device Administration

- Operating systems: Debian and CentOS-based Linux systems, Windows
- Routers & switches: Cisco IOS, Dell NOS, Ciena SAOS & D-NFVI, Juniper SRX

Education

University of Toronto

Ph.D. *(Electrical & Computer Engineering)* *Sept. '14 – Sept. '21*

- Thesis: *Client-Centric Orchestration and Management of Distributed Applications in Multi-Tier Clouds*

M.A.Sc. *(Electrical & Computer Engineering)* *Sept. '11 – Dec. '14*

- Thesis: *Implementation and Evaluation of an SDN Management System on the SAVI Testbed*

B.A.Sc. *(Computer Engineering)* *Sept. '06 – Jun. '11*

- Capstone: *An iPad Application in Vehicular Networks*