TIM JOHNSTON

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PROFESSIONAL EXPERIENCE

Christie Digital Systems 2023 - March 2025
Senior Product Developer, Software (Team Leader) *Kitchener, ON*

- Developed secure code signing REST API server and external-facing manufacturing API servers
- Restructuring of underlying storage and compute layer across all managed services
- R&D efforts toward additional git repository maintenance:
  Using *git-annex* and history rewriting to address large repositories containing many-versioned binary files
- Hired and mentored teammates, created internal book club, collaborated with IT department
- Advised on software design topics for other teams and to an internal working group on AI tools policy

2018 - 2023
Advanced Product Developer, Software *Kitchener, ON*

- Created and developed an engineering infrastructure team supporting hardware and software development
- Introduced container-based CI/CD pipelines, binary asset repository, cluster-based platform services, observability tools
- Migration of SVN repositories to git, cleanup and reorganization of git repositories:
  History rewriting - revising use of submodules/subtrees, removing committed binary files
- Created a provisioning service for development environments, custom OpenSSH build to support this

Clearpath Robotics 2016 - 2018
Infrastructure Software Developer, Senior Software Developer (2018) *Kitchener, ON*

- Developed CI/CD pipelines for autonomous vehicles and VM appliances using Jenkins, Packer and VMWare
- Supported configuration management of field assets using Ansible
- Early-stage deployment and integration of Apache Airflow to operate on field product telemetry data
- Gathered software quality metrics and crash reporting data via Elasticsearch and Sentry

McMaster University 2014 - 2016
Teaching Assistant: SFWR ENG 2DA4, SFWR ENG 4AA4, SFWR ENG 3I03 *Hamilton, ON*

- Supervised labs on digital system design using FPGAs, Linux real-time control systems, kernel module programming
- Prepared and delivered guest lecture on automotive software safety
- Delivered tutorials, marked assignments, coached students on professional communication

Evertz Microsystems 2011-2014
Design Engineer *Burlington, ON*

- Software product development for broadcast infrastructure systems
- DSP codecs, MPEG stream parsing, multicast AV decoder, high-density broadcast router control

EDUCATION

McMaster University *2016*
M.A.Sc. Software Engineering
Thesis: Toolkit for Automatic Collection and Predictive Modelling of Software Metrics
Focus of study: Statistical models of software reliability

B.Eng. Software Engineering *2011*
Embedded Systems specialization
Capstone project: lane-following scale model car with automatic and manual control

TOOLS AND SKILLS

Team and Project Management	Continuous development of resilient, independent teammates Incremental commitment development approach Mentorship on debugging and problem solving strategies Knowledge management via mdbook, wikis, meeting minutes Diagrams via plantUML, kroki, mermaid, draw.io
Languages	Go Python Shell Powershell C C++ Ruby Groovy GDScript LaTeX *Currently refreshing on:* Javascript TypeScript CSS HTML
Build, Deployment, Orchestration	GitlabCI Jenkins Gitea DroneCI make CMake SCons Nomad Consul Packer Ansible *Currently learning:* Terraform
Security and Secrets Management	Vault pass gpg biscuits OPNsense nitrokey iptables pf fwknopd OpenSSH tinyssh headscale
Databases	RethinkDB MongoDB PostgreSQL SQLite
Storage and Clustering	DRBD LVM NFS ZFS Pacemaker multipath-tools
Source and Asset Control	git SVN Fossil Artifactory MinIO git-annex
Observability	Telegraf Promtail OpenTelemetry VictoriaMetrics InfluxDB Loki Tempo Grafana
Environments	Linux OpenBSD Windows Docker Podman LXD QEMU Proxmox VMWare
Cloud Providers	Vultr DigitalOcean *Currently learning:* AWS (EC2, KMS, SQS..)
3D Game Development	Godot, Quake and Goldsrc engines Gameplay, shaders & netcode programming Ideation, design and project management

OTHER PROJECTS AND INTERESTS

Personal infrastructure lab	Maintaining Linux machines used for development of hobby projects Mixture of cloud/VPS and on-premises hardware Self-teaching GNU Guix build and deployment tooling
Hobby Game Development	Solo development of a first-person shooter using the Godot Engine: Design, gameplay and network programming, shaders, 3D models and maps Separately: maintenance of a legacy multiplayer first-person shooter (Half-Life modification)
Computer music	PureData and Max/MSP with a Raspberry Pi for guitar audio processing
Volunteering	Community Support Connections “Meals on Wheels” program (joined April 2025) Delivering prepared meals to residents, performing brief wellness check at time of delivery