Maxim Piatine

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Summary
Software Engineer with experience deploying production systems in high-security environments, specializing in Golang and Python, distributed systems, and cloud infrastructure. Strong background in computational neuroscience and machine learning, with experience building models and simulations for biological systems.

Languages C++, Golang, Python, JavaScript, R, ROOT, SQL, Bash, Rust
Developer Tools Git, Docker, Nginx, AWS, MySQL, MongoDB, Oracle, Grafana, Gunicorn
Frameworks & Technologies Linux (Ubuntu, RedHat, CentOS), Django, React

Work Experience

Forward Deployed Software Engineer, NRT Technology Toronto, ON (May 2024 - Present)

- Led end-to-end deployment of **20 projects on Linux servers** within casino DMZ environments, enabling seamless communication with mobile applications utilized by **50,000+ users**. Configured MySQL/MSSQL/Oracle **databases**, system services, **SMTP** pipelines, **REST APIs**, Route53 **DNS**, **SSL** certificates, **Nginx** reverse-proxy configurations, and all required dependencies for **Golang gorillamux** services.
- Boosted DM server performance by migrating legacy **Python** projects to **Golang on AWS**, **reducing latency and improving runtime efficiency** across DM operations.
- Built a custom **Docker** deployment for DM services with external Oracle DB connectivity on AWS phone servers, resolving integration issues that blocked standard deployment methods.
- Implemented **MFA** and **JWT-based session handling** for secure operator–guest authentication, reducing security risks.
- Integrated server error logging and metrics to interface with **Grafana**, enabling real-time monitoring and diagnostics.
- Integrated an **OTP communication system** linking casino slot machines with the mobile application: when a player inserts a casino card, the slot machine generates a one-time passcode that is securely transmitted to the user's mobile app for identity verification.

Research Assistant, uOttawa Ottawa, ON (Sept 2024 - Sept 2025)

- Contributing to a **neuroscience publication** investigating transient amplification in cortical microstimulation.
- Analyzing how electrical stimulation causes an imbalance in excitatory and inhibitory axon recruitment, leading to a transient runaway excitation followed by delayed inhibition.
- Architected and implemented a toy model and assisted in the **spiking neural network** simulations that exhibit transient amplification under direct and indirect stimulation using **Python and Pytorch**.
- Supported comparison of model outcomes with experimental data, evaluating the consistency between computational predictions and observed cortical activity.
- Exploring the potential of cortical stimulation as a neuromodulatory approach, with the aim of reducing invasiveness relative to deep brain stimulation (DBS) in treating disorders such as Parkinson's disease and epilepsy.

Software Developer / Full Stack Developer, Rolls-Royce Montreal, QC(June 2022 - June 2023)

- Utilized Agile methodologies and Azure DevOps to meticulously audit and breakdown business requirements, ensuring alignment with user needs and functionality **(CRUD)**. Led a project to streamline part test organization during engine testing, enhancing departmental efficiency.
- Engineered a Data Management System using **Django web framework**, employing **MVC architecture** to meet stakeholder business requirements. Implemented a Scheduler, Detection, and Processing architecture to manage files/folders while ensuring robust error handling and change auditing. Integrated **models, views, unit testing, APIs, and jinja templating** for comprehensive functionality.
- Developed a custom **API** to facilitate seamless communication between various applications within Rolls-Royce, leveraging URL endpoints for data filtering based on file/folder attributes such as size, source, registration date, and tags.

Education

University of Ottawa, Master in Science Physics Ottawa, ON

- Thesis concentration in computational neuroscience, focused on modeling cortical stimulation and axonal recruitment dynamics.

University of Toronto, Honours Bachelor of Science Toronto, ON

- **Physics** Major, **Statistics** Major, and **Mathematics** Minor

Projects

Seizure Detection

- Developing a seizure detection system to predict onset and duration of epileptic events using EEG time-series data. Building recurrent neural network (RNN) architectures and applying Fourier-domain feature extraction to identify predictive biomarkers.