

# JC Petkovich

404 King Street West, Kitchener, Ontario N2G4Z9

🌐 ptk.io

✉ jcpetkovich@gmail.com

📁 jcpetkovich

📞 519-504-6012

## SUMMARY

---

Experienced leader of high performing software engineering and data science teams, responsible for building and deploying client facing ML-powered applications for enterprise using distributed microservices, high availability data stores optimizing for security, configurability and scalability.

## HIGHLIGHTS

---

- Founder and Engineering Manager of a successful Microsoft-backed AI SaaS provider (Acerta)
- 5 years of experience leading a team of 17 reports (including 3 managers)
- Trained 2 managers; 2 Senior and 5 Junior SWEs; 3 Senior and 7 Junior Data Scientists
- Experience building and nurturing relationships and networks with enterprise clients
- Extensive experience with Scrum/Agile, Kanban, and Waterfall
- 10 years of IC experience as a Machine Learning Engineer and Data Scientist (Python/R/C++/Java)
- 2 years of Embedded system and firmware development experience

## IMPACT

---

- Shim Predictor (Component recommendation model) - airflow + tensorflow-based microservices  
**-50% drop in Fallout rate in axle and transmission manufacturing (+1.7% MRR)**
- Manufacturing Process Drift Detection - Apache Spark, airflow + postgres  
**1% increase in First-Time Through (+0.86% MRR)**
- Line Root-Cause model - Tensorflow, dockerized, deployed via k8s, with a flask/React frontend  
**5% drop in scrap rates (+0.1% MRR)**
- Maximum Available Traction Estimator (for ABS braking) - Tensorflow  
**< 250ms latency, shrank model to 3MB and deployed to an embedded system**
- Engine Diagnostics - Keras model, novel statistical methodology for faults detection  
**99% reduction in root-cause analysis time**
- Predictive Maintenance Engine Model - Keras sklearn preprocessing, applied on aggregate CANbus  
**critical engine failures detected earlier than warning light by 400km on average**
- Battery diagnostics & RUL accuracy, Survival Trees and followup statistical analysis  
**5% > precision and recall over the electrochemical model**
- Transmission pre-EOL model, Keras  
**20% increase in transmission defects detected early (+2% MRR)**
- Transmission EOL Model  
**40% of in-field in-warranty failures caught at the EOL**

## EXPERIENCE

---

### Acerta Systems Analytics

*Engineering Manager*

**Kitchener, ON**

*Sept 2015 - Jun 2021*

- Founder and Engineering Manager at Acerta - A Microsoft-backed AI SaaS provider
- Customers include Tier 1s and OEMs such as Nissan, GM, Volvo, Dana, Aisin AW, and ZF
- Built products maximizing manufacturing throughput, quality, and minimizing scrap
- Defined and oversaw the technical roadmap for the LinePulse product (an AI cloud-based process-monitoring and component recommendation system)
- Established and nurtured relationships and networks with enterprise customers

## University of Waterloo

*PhD Student*

Waterloo, ON

*Sep 2012 – Aug 2015*

- Developed Bayesian models for computer program performance.
- Developed statistical models of memory layout performance effects.
- Developed a heterogeneous performance evaluation infrastructure with an intelligent self optimizing scheduler
- Developed kernel-level assertions on interprocess behaviour and communication
- Developed models for predicting computer program performance across platforms

## QNX Software Systems

*Software Engineer (Consultant)*

Ottawa, ON

*Aug 2011 – Dec 2011*

- Porting libusb to the QNX microkernel
- Hand-coded assembly for optimization of selected QNX-variant netbsd libc routines

## Bombardier Transportation

*Computer Engineer (Consultant, various projects)*

Kingston, ON

*Apr 2007 – Sep 2009*

- Developed one of the control mechanisms for a high-power high-frequency inverter for the PRIMOVE Light Rail Trams
- Developed the track power-control mechanism for the Bautzen test ring
- Developed a microcontroller based door control mechanism (PCB design and microcontroller programming)

## SELECTED PUBLICATIONS

---

### **Intersert: Assertions on Distributed Process Interaction Sessions**

*IEEE International Conference on Software Quality, Reliability & Security (QRS)*

J-C. Petkovich, Newsham, Z., A. Oliveira, A. Rehman, G.M. Tchamgoue, and S. Fischmeister

### **Transferring Performance Prediction Models Across Different Hardware Platforms**

*International Conference on Performance Engineering (ICPE)*

J-C. Petkovich, Valov, P., J. Guo, S. Fischmeister, and K. Czarnecki

### **DataMill: Rigorous Performance Evaluation Made Easy**

*4th ACM/SPEC International Conference on Performance Engineering*

J-C. Petkovich, A. Oliveira, T. Reidemeister, and S. Fischmeister

### **How Much Does Memory Layout Impact Performance? A Wide Study**

*Proc. of the International Workshop on Reproducible Research Methodologies (REPRODUCE)*

J-C. Petkovich, A. Oliveira, and S. Fischmeister

### **DataMill: a distributed heterogeneous infrastructure for robust experimentation**

*Journal of Software Practice and Experience*

J-C. Petkovich, A. Oliveira, Y. Zhang, T. Reidemeister, and S. Fischmeister

## EDUCATION

---

### **University of Waterloo**

*PhD in Computer Engineering*

Waterloo, ON

*PhD Candidate: 2017*

### **Carleton University**

*M.Sc. in Computer Science*

Ottawa, ON

*Graduated: 2011*

### **Queen's University**

*B.A.Sc. Computer Engineering*

Kingston, ON

*Graduated: 2009*