Vadim Smolyakov

E-mail: vss@alum.mit.edu
https://vsmolyakov.github.io
https://github.com/vsmolyakov

OBJECTIVE To obtain Principal Machine Learning Engineer position

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA 2012 – 2019
PhD Computer Science and Artificial Intelligence
Sensing, Learning and Inference Laboratory
Research: Bayesian Non-Parametrics, Statistical Inference, Deep Learning
Advisor: Prof. John Fisher

University of Toronto, Toronto, ON 2009 – 2011
MASc Electrical Engineering: Wireless Architecture
Research: Baseband Signal Processing for Digital Communications
Thesis: "A Fault-Tolerant Strategy for Embedded-Memory SoC OFDM Receivers"
Advisor: Prof. Glenn Gulak

University of Toronto, Toronto, ON 2004 – 2009
BASc (Honors) Engineering Science: Electrical Engineering Major
Research: Digital Signal Processing Algorithms and VLSI Architecture for Seizure Prediction
Thesis: "A Study of Seizure Prediction Based on EEG Phase Synchronization"
Senior Year GPA: 4.0/4.0

SUMMARY

- Experience with software development for data science and machine learning at scale
- Proficient with Python, C/C++, Scala, Spark, SQL, TensorFlow, PyTorch, Keras
- Author of "Machine Learning Algorithms in Depth" book
- 2 journal publications, 5 refereed conference papers, 2 U.S. patents
- Fast learner with excellent interpersonal, communication and leadership skills

INDUSTRIAL EXPERIENCE

Senior Machine Learning Engineer, Microsoft Inc, Redmond, WA Nov 2019 – Present
- Reinforcement learning fine-tuning for generative orchestration
- Fine-tuning and AI quality evaluation of Gen Answers RAG system
- Serving open-source models, inference optimizations, production deployment
- Technology stack: Triton, vLLM, SGLang, TensorRT-LLM, ONNX, Docker

Data Science Intern, Microsoft Inc, Redmond, WA Jun 2019 – Aug 2019
- Designed data stream classification model and user session prediction
- Technology stack: Keras, TensorFlow, VS code, Docker, Kubernetes, Kafka, Azure

Data Science Intern, Rue Gilt Groupe, Boston, MA Jun 2018 – Aug 2018

- Visual search, product classification, product hierarchy
- Technology stack: AWS, TensorFlow, Spark, Python, Scala, Snowflake

Data Science Intern, Shopify Inc., Ottawa, ON Sep 2016 – Dec 2016

- Developed distributed NLP chat classification system using Spark
- Technology stack: Spark, MLlib, MapReduce, Hadoop, Redshift, Tableau, Python, MySQL

Systems Research Intern, Qualcomm Inc., Bridgewater, NJ May 2013–Sep 2013

- Developed beam-search and beam-tracking algorithms for mm-wave wireless communication.

Digital Baseband Design Engineer, Qualcomm Inc., Santa Clara, CA Jan 2012 – Aug 2012

- Designed a QR decomposition core for an 802.11ac MU-MIMO receiver

Communication Systems Engineer, MaxLinear Inc., Carlsbad, CA Jan 2011 – June 2011

- Developed a new fault-tolerant strategy for embedded-memory SoC OFDM receivers

RESEARCH EXPERIENCE

Research Assistant, Prof. John Fisher, MIT Sep 2014 – May 2019

- Developed a mini-batch Gibbs sampling algorithm for large scale inference problems
- Topic model inference using Stochastic Variational Inference (SVI) and split-merge MCMC sampling algorithms applied to modeling driver behavior

Research Assistant, Prof. Greg Wornell, MIT Sep 2012 – May 2014

- Formulated the problem of ultrasound imaging as point target parameter estimation
- Implemented ultrasound imaging models in Matlab using Field II ultrasound simulator

Research Assistant, Prof. Glenn Gulak, University of Toronto June 2009 – Sep 2011

- Prototyped an LTE MIMO receiver: K-Best soft-decision detector, QR channel matrix decomposition, and a CTC decoder

Research Assistant, Prof. Roman Genov, University of Toronto Sep 2008 – May 2009

- Developed an early seizure prediction algorithm based on phase synchronization of two neural EEG signals and verified the algorithm on human EEG data

SELECTED COURSES

Algorithms for Inference, Machine Learning, Advances in Computer Vision, Advanced Natural Language Processing, Advanced Algorithms, Optimization Methods, Discrete Stochastic Processes, Computational Biology, Digital Communications, Digital Signal Processing, Financial Engineering, Analytics of Finance

REFERENCES AVAILABLE UPON REQUEST