NICOLAS BENT

nicolasbent@rogers.com | 613-286-9052

OBJECTIVE

I am an experienced **developer** seeking a position where I can transform innovative **ML research** into cutting-edge **products.**

EDUCATION

Hon. B.Sc. Physics (spec. Mathematics), University of Ottawa (2016)
PhD, Computer Engineering, Polytechnique University (part time)

SKILLS

Machine Learning – PyTorch; TensorFlow; NLP
Programming – Python; GoLang; C; Git; Docker; MatLab; Bash
Languages – English (native); Spanish (native); French (advanced)

MACHINE LEARNING

SAMSUNG Ads

MACHINE LEARNING ENGINEER (2019-PRESENT)

Developed campaign price optimizer, reducing the price of campaigns by 40%. Expected to save over 10 million in revenue in 2021.
Created smart pacing control system for campaign delivery brining in over 1 million in revenue in 6 months.
Implemented ML service to bring ML models into production.

BOREALIS AI
RBC Institute for Research

RESEARCH DEVELOPER (2018-2019)

Developed financial news product using NLP algorithms.
Improved entity linking for new articles using using state of the art models.
Owned component of CI/CD pipeline; responsible for Dockerfile, all documentation, interactions with other components.
Increased 5x the speed of data and model pipeline in production, through profiling and optimization.
Crafted novel experiments with word and sequence embeddings to evaluate effectiveness of different techniques.

SUMERIA

FOUNDER & CHIEF TECHNICAL OFFICER (2017-2018)

Founded start-up utilizing ML algorithms in the financial sector.
Raised 100K in seed money from investors.
Led the development of innovative NLP software which analyzed media headlines for stock prediction.

RELOGIX

ML DEVELOPER (2017)

Built ML algorithm to predict number of people in a room using infrared detectors.
Leveraged CNN for feature extraction and **LSTM** for sequence modelling.

NICOLAS BENT

nicolasbent@rogers.com | 613-286-9052

RESEARCH

INTERNSHIPS

2016-2017	**Computational Systems Neuroscience Lab** McGill University
2015-2016	**Centre for Neuronal Dynamics** University of Ottawa
2013-2015	**Quantum Non-Linear Optics Lab** University of Ottawa
2013	**Quantum Optics Lab**, University of Darmstadt, Germany
2012	**Department of Mathematics**, University of Ottawa

AWARDS

NSERC Undergraduate Student Research Award ($6,000/ea)

2015	Computational Neurophysics
2013	Quantum Information Theory
2012	Reflection and Orthogonal Groups

2010-14 **Dean's List**

PUBLICATIONS

Kuebler, E. S., Calderini, M., Longtin, A., **Bent, N.,** Vincent-Lamarre, P., & Thivierge, J. P. (2018). Non-monotonic accumulation of spike time variance during membrane potential oscillations. *Biological cybernetics*, *112*(6), 539-545.

Bouchard, F., Harris, J., Mand, H., **Bent, N.**, Santamato, E., Boyd, R. W., & Karimi, E. (2015). Observation of quantum recoherence of photons by spatial propagation. *Scientific reports*, *5*, 15330.

Bent, N., Qassim, H., Tahir, A. A., Sych, D., Leuchs, G., Sánchez-Soto, L. L., ... & Boyd, R. W. (2015). Experimental realization of quantum tomography of photonic qudits via symmetric informationally complete positive operator-valued measures. *Physical Review X*, *5*(4), 041006.

Karimi, E., Giovannini, D., Bolduc, E., **Bent, N**., Miatto, F. M., Padgett, M. J., & Boyd, R. W. (2014). Exploring the quantum nature of the radial degree of freedom of a photon via Hong-Ou-Mandel interference. *Physical Review A*, *89*(1), 013829.

Bolduc, E., **Bent, N.,** Santamato, E., Karimi, E., & Boyd, R. W. (2013). Exact solution to simultaneous intensity and phase encryption with a single phase-only hologram. *Optics letters*, *38*(18), 3546-3549.

TEACHING

2015-2016	**Professor** – Essential Mathematics, Algonquin College
2012-2016	**Teaching Assistant**–Physics, Maths, University of Ottawa

CONFERENCES/WORKSHOPS

2019	**Waterloo Reverse Co-op**
2018	**NEURIPS** (Montréal)
2015	**Queen's Undergraduate Physics** (Kingston)
2013	**Optical Society** (Montréal)

EXTRA-CURRICULAR

STEM

Mentor – Professional mentorship in ML (3 mentees)
Panelist – Diversity in STEM panel (Dawson College)
Educator – Brain Reach, youth neuroscience (McGill)

COMMUNITY

Big Brother – Mentor at-risk youth
DataforGood – MaisonFemmes Project