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ERIK TILLBERG
MSC. COMPUTER SCIENCE

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EMPLOYMENT

Co-Founder & CTO **The Happenin Company** (happenin.io) **Jan 2021 - Present**
- Led a team of 7 developers building the Happenin platform for public and private events
- Researched, designed, and implemented a recommendation engine for events and activities based on user behaviour
- Built an Android, iOS, and web app in React Native/React for public and private events, and a vendor facing portal for ticket sale tracking, guest lists, ticket scanning, and customer communications
- Developed backend ticketing, payment, and email systems by integrating with external APIs such as Stripe
- Played key part in helping to raise $200,000 in funding

CTO **iMerciv Inc.** (mapinhood.com) **Nov 2018 – Jan 2021**
- Leading a team of 3 engineers, built an accessible navigation app for pedestrians on Android and iOS with React Native
- Built an accessible, high-performance routing engine for pedestrians in Java with hundreds of parameters such as slope, obstacles, foot-traffic, and street lighting data for safe and accessible routes
- Implemented custom user routing profiles for personalized routes through urban centres
- Built containerized REST service in Python using Flask exposed with Kubernetes, interfacing with a PostgreSQL database
- Worked closely in partnership with the Microsoft AI for Accessibility team, the Canadian National Institute for the Blind, and Spinal Cord Injury Ontario to build, test and pilot our product
- Designed proof of concepts, wrote applications, and met with stakeholders which helped raise $1,000,000 in funding

Teaching Assistant **University of Toronto** **Jul 2017 - Feb 2018**
- Courses: Head TA for CS 207 - Software Design, and CS 148 - Introduction to Computer Science
- Ran office hours for students in all years to help with upcoming assignments and studying for exams

Computer Programmer **Thicket Labs** **May 2016 – Apr 2017**
- Increased speed of their fuzzy cognitive map convergence algorithm by 10x
- Implemented web designs in Angular JS along with server-side methods in Java
- Developed model for simulating homelessness over time in urban areas by importing many public data repositories
- Built a website to display simulation results and allow users to input varying policies to modify the simulation and show differences from the baseline

EDUCATION

Toronto, ON **University of Toronto** **Sep 2017 – Feb 2019**
- Master of Science in Computer Science GPA: 3.6
- Thesis: *Optimal Bidding Strategies for Online Ad Auctions with Overlapping Targeting Criteria*. Designed and implemented a provably optimal algorithm for setting bid prices and assigning ad spots to campaigns in online auctions
- Coursework: Computational Linguistics, System Modelling & Analysis, Convex Optimization, Algorithms for Collective Decision Making, Machine Learning (audited)

Thunder Bay, ON **Lakehead University** **Sep 2012 – Jun 2017**
- Honours Bachelor of Science in Computer Science, GPA: 4.0
- Coursework Highlights: Machine Learning, Artificial Intelligence, Cloud Computing, Big Data, Multivariable Calculus, Programming Languages, Comp. Architecture, Algorithm Design & Analysis, Cryptography, Comp. Networks, Graphics

TECHNICAL EXPERIENCE

Projects
- **Online Ad Auction Bid Assigner** (2018). Developed a reinforcement learning algorithm to assign online ad slots to ad campaigns based on user data from the ad and the targeting criteria of the campaigns
- **Twitter Stock Predictor** (2016). Developed tool for predicting stock trends using tweets & support vector machines
- **Virtual Stock Exchange** (2015). Platform for stock trading with virtual currency based on real-time stock prices
- **Particle Image Velocimetry (PIV) Algorithm** (2014). Developed an algorithm for PIV which computes a vector field of fluid velocities derived from images of particles in a fluid hit with a high intensity laser

Languages and Technologies
- Python; Java; JavaScript; C++; MongoDB; PostgreSQL; MySQL; sqlite3; React; React Native; Android; iOS; HTML; CSS
- Docker; Kubernetes; Jenkins; Nginx; Azure; AWS; Accessible Technology; Firebase; Flask; FastAPI; git; PyTorch