Daniel Melcer

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Education

Northeastern University Boston, MA   *September 2017 - May 2021*
Khoury College of Computer Sciences | GPA: 4.0
Candidate for a Bachelors of Science in Computer Science, Minors in Math and Physics

Coursework	Algorithms, Systems, Programming Languages, Verified Compilers, Building Extensible Systems
Awards	Northeastern University President's Award, Honors Program, Dean's List
Activities	NUHacks, Times New Roman Satire Magazine

Experience

Datto Software Development Intern, Norwalk, CT   *January 2020 - May 2020*
- Contributed to a Symfony web application that enables tens of thousands of Managed Service Providers to support their clients by managing Datto products through a unified web portal
- Collaborated on new email reporting microservice architecture to reliably scale 10x to match demand
- Designed and prototyped a mock server to simulate external dependencies during automated tests
- Migrated thousands of lines of Javascript to Typescript and formalized shared object types
- Wrote two new chapters for the internal style guide on Typescript type design and SQL best practices

Griffiss Institute Research Co-op, Rome, NY   *January 2019 - June 2019*
- Used Pytorch to implement a formal specification based reinforcement learning mechanism to enable a 50% higher success rate in sparse-reward tasks, with the ability to transfer knowledge to similar tasks
- Researched an exploration method that combines intrinsic curiosity networks and tree search to explore new environments without manually specifying a reward function
- Experimented with the application of new sequence-modeling methods to predict results of an action

Forward Thinking Systems Software Development Intern, Jericho, NY   *May 2018 - August 2018*
- Analyzed sensor data with Python and Keras to detect potential camera blockages and failures in thousands of commercial vehicle dashcams
- Worked with remote team to create C# application to view and export video from a backup disk
- Migrated password-based SOAP API to an OAuth2 REST API, with scope-based authorization, sub-account support, and the ability for users to grant limited access to third-party applications
- Developed an extensible Typescript Alexa skill for users to perform common administrative tasks

Brookhaven National Laboratory Summer Research Intern, Upton, NY   *July 2016 - August 2017*
- Increased speed of search for mathematical constants by over 100x by parallelizing search with CUDA
- Wrote a Python desktop application to sort and search a database of over 1,000 ethernet ports
- Constructed a Django website to improve the efficiency of administering on-site network switches

Publications

Verification-Guided Tree Search AAMAS 2020, Auckland, NZ (Online)   *May 2020*
Alvaro Velasquez, Daniel Melcer | Extended Abstract   *dl.acm.org/doi/10.5555/3398761.3399063*

Projects

ShellShare Best Command Line Tool Runner Up, HackMIT 2019   *September 2019*
Remote desktop over a SSH connection with terminal mouse inputs   *github.com/dmelcer9/shell-share*

Connect Four Smart Contract Ethereum Network   *December 2017*
Rules are verified by a distributed computer and game history is stored on a blockchain   *connectfour.melcer.dev*

Skills

Python, Typescript, Java, C#, SQL, PHP, CUDA C, Solidity, PyTorch, React, Git