# 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 (graduate), Systems (graduate), Programming Languages (graduate), Verified Compilers Building Extensible Systems, Theory of Computation, Group Theory, Number Theory, Linear Algebra
**Awards** Northeastern University President's Award, Honors Program, Dean's List
**Activities** NUHacks, Times New Roman Satire Magazine

## Skills

**Languages** Python, Typescript, Java, C#/VB.NET, SQL, PHP, Javascript, Racket, Solidity, C/C++/CUDA
**Tools** React, PyTorch, Symfony, Git, MySQL, Postgres, AWS

## Experience

**Datto • Software Development Intern** • Norwalk, CT *January 2020 - May 2020*

- Contributed to a Symfony web application that enables thousands of Managed Service Providers to support their clients by managing Datto products through a unified web portal
- Developed microservices to scalably generate and email reports to customers
- Strengthened the internal style guide with best practices for SQL queries and Typescript type design
- Integrated end-to-end automation tests as part of the scrum team's definition of done

**Khoury College of Computer Sciences • Course Assistant** • Boston, MA *January 2018 - December 2019*

- Mentored students on topics such as effective testing and program design during lab sections and office hours

**Griffiss Institute • Research Co-op** • Rome, NY *January 2019 - June 2019*

- Researched a reinforcement learning exploration method by combining tree search and intrinsic curiosity
- Used PyTorch to implement a novel mechanism to learn an optimal policy faster in some scenarios
- Collaborated with other students to apply recent research on sequence transformers to reinforcement learning

**Forward Thinking Systems • Software Development Intern** • Jericho, NY *May 2018 - August 2018*

- Detected features such as camera blockages present in image thumbnails with Python and Keras
- Collaborated with Poland office on C# application to view and export archived video from an external disk
- Migrated a password-based Java SOAP application to REST and implemented an OAuth2 token flow
- Created a real-time dashboard in VB.NET to report statistics on current support queues and SLA percentages

**Brookhaven National Laboratory • Summer Research Intern** • Upton, NY *July 2016 - August 2017*

- Constructed a Django website to improve operational efficiency while administering on-site network switches
- Wrote a Python desktop application to manage, sort, and search a database of over 1,000 ethernet ports
- Increased speed of search for mathematical constants by over 100x with CUDA

## Publications

**Verification-Guided Tree Search • AAMAS 2020** *May 2020*
*Extended Abstract • Alvaro Velasquez, Daniel Melcer*

## Projects

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

**Charity Cart • Brickhack 2019 • Most Socially Impactful Project** *February 2019*
*Automatically finds cheaper groceries and donates to charity* *devpost.com/software/charity-cart*

**Invertible Programming Language • Northeastern University** *January 2018 - April 2018*
*Racket Language Extension to enable definition of invertible functions* *github.com/Inverse-Lang/Inverse-Lang*

**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*