

# Henry Barthelemy

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## Education

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**Masters of Science in Computer Science** September 2024 - May 2025  
*Northeastern University, Boston, MA* GPA: 3.78/4.00

**Bachelors of Science in Computer Science and Mathematics** September 2021 - May 2024  
*Northeastern University, Boston, MA* GPA: 3.80/4.00

## Work Experience

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**Software Engineering Intern** May 2024 - Present  
*Visa Inc. Operations and Infrastructure Team, Austin, TX*

- Incorporating a friendly UI allowing users to easily create, configure, and remove sidecar containers for their applications

**Software Engineering Co-op** January 2023 - June 2023  
*PhAST Diagnostics, Boston, MA*

- Created a backend system using a Java AWS Lambda which dynamically scales EC2 instances based on the queue size, ensuring optimal resource utilization with 75-95% of the EC2 instances consistently occupied
- Integrated a Python program seamlessly into the workflow which organized microscope images into easy-to-read pdf pages from their metadata
- Upkept a C# front-end GUI interface and Java back-end to automate microscopic lab work, implementing new features like continuous uploading, recovery, and diagnostic run types
- Developed a Python application utilizing a state machine architecture for seamless communication and interaction with firmware embedded within a medical device, as a critical component of an FDA-regulated clinical trial

## Campus Talks

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**Directed Reading Program Final Presentation: Algebraic Topology** May 2023  
*Northeastern University*  
Title: Algebraic Topology: The Fundamental Group  
Presented various topological theories to the Mathematics department at Northeastern University as part of the final portion of a mathematics directed reading program. Mentored by PhD Student Dezhou Li.

## Teaching Experience

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**Teaching Assistant: Accelerated Fundamentals of Computer Science 2** Terms: Spring 2024  
*Northeastern University under Professor Benjamin Lerner*  
Accelerated smaller section of a second introductory course in computer science. Covers basics of object oriented programming and big o analysis.

**Teaching Assistant: Theory of Computation** Terms: Fall 2023  
*Northeastern University under Professor Ariel Hamlin*  
Covers computability, complexity, and automata theory. This includes Turing machines, the Church-Turing thesis, decidable languages, P and NP, NP-completeness, finite automata, nondeterminism, and context-free languages.

**Teaching Assistant: Fundamentals of Computer Science 2** Terms: Summer 2022, Fall 2022  
*Northeastern University under Professor Leena Razzaq*  
Second introduction of computer science course taught, students learn basics of object oriented programming

## Research Experience

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**Exemplar** January 2024 - Present  
*Northeastern University*  
Working with Professor Benjamin Lerner to create the Exemplar tool and tune it for each assignment. The

tool has students separate correct implementations called “wheats” from buggy implementations called “chaffs” through writing examples and tests.

**Private Information Retrieval Independent Study**

Spring 2024

*Northeastern University*

Worked with Professor Ariel Hamlin on researching the private information retrieval (PIR) problem. Final paper summarizes and compares important historical and state of the art results in the PIR field.

**Other**

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**Summer Program Instructor and Assistant Director**

2019 - 2021

*Robotics and Beyond, New Milford, CT*

Taught and designed python, java, and arduino classes for students aged 10-15. Wrote blogs and assisted in the transition to virtual classes during the pandemic.