

# Emily Herbert

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## Education

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- 2021–present **PhD in Computer Science**, *Northeastern University*, Boston, MA.  
2021 **MS in Computer Science**, *The University of Massachusetts Amherst*, Amherst, MA.  
2018 **BS in Computer Science**, *Trinity University*, San Antonio, TX.

## Skills

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### Languages.

Proficient: Rust, Scala, JavaScript, TypeScript, Python, OCaml, C++  
Familiarity: Haskell, Idris, C, C#, R, Java, Greenfoot, ScalaFX, JavaFX

### Tools.

Kubernetes, Docker, OpenWhisk, Google Cloud Platform, Unity

### Specialties.

Serverless Computing, Cloud Computing, Language Development, Compiler Development, Programming, Software Design, Distributed Computing, Game Development, Object Oriented Programming, Functional Programming, System Design, Algorithms

## Work Experience

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- May 2021 – **Google**, *Madison, WI*.  
Aug 2021 Software Engineering Intern  
Implemented load balancing in a library meant to interface with the network card and perform RPC-like operations using RMA, achieved by integrating two existing early-development libraries together. Contributed to app design on a Google 2023 project.
- June 2017 – **National Aeronautics and Space Administration (NASA)**, *Langley, VA*.  
Aug 2017 NASA Internships, Fellowships, and Scholarships (NIFS) Intern  
Contributed to the NASA Safeguard autonomous drone geofencing project. Designed and implemented system for on-board flight control of GPS devices. Refactored code from previous NASA flight missions to meet current mission standards.
- June 2016 – **General Electric (GE)**, *Oil & Gas, Billerica, MA*.  
Aug 2016 Information Technology Leadership Program (ITLP) Intern  
Created asset tracking system for shop floor using RFID, Bluetooth LE, and Raspberry Pi. Worked with the SAP enterprise resource management software to automate EHSM compliance checks.

## Research Experience

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- Jan 2021 - present **NeuPRL Lab**, *Northeastern University*.  
Northeastern Programming Languages Lab (NeuPRL), advised by Prof. Arjun Guha. Researching programming language and systems tools for serverless computing.  
[prl.ccs.neu.edu](http://prl.ccs.neu.edu)
- May 2019 - Jan 2021 **PLASMA Lab**, *University of Massachusetts Amherst*.  
Programming Languages and Systems at Massachusetts lab (PLASMA), advised by Prof. Arjun Guha. Researching programming language and systems tools for serverless computing.  
[plasma-umass.org](http://plasma-umass.org)
- June 2018 - May 2019 **DREAM Lab**, *University of Massachusetts Amherst*.  
Data systems Research for Exploration, Analytics, and Modeling lab (DREAM), advised by Prof. Peter Haas. Researching deep learning methods for simulation input modeling.  
[dbgroup.cs.umass.edu](http://dbgroup.cs.umass.edu)

## Publications

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Wang Cen, Emily A. Herbert, and Peter J. Haas. NIM: Modeling and Generation of Simulation Inputs via Generative Neural Networks. *Winter Simulation Conference*. 2020. [[paper](#)]  
**Best Contributed Theoretical Paper Finalist**

Emily A Herbert, Wang Cen, and Peter J Haas. NIM: Generative Neural Networks for Simulation Input Modeling. *Summer Simulation Conference*. 2019. [[short paper](#)]

## Preprints

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Emily Herbert and Arjun Guha. A Language-based Serverless Function Accelerator. 2021. [[preprint](#), [repo](#)]

## Invited Talks

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Emily Herbert. A Language-based Serverless Function Accelerator. *Cornell CAPRA Lab*. 2020. [[slides](#)]

## Conference Talks & Posters

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Emily A Herbert. NIM: Generative Neural Networks for Simulation Input Modeling. *SCS Summer Simulation Conference*. 2019. [[slides](#)]

## Panels

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Graduate Student Life. *Trinity University*. October 2020.

## Teaching Experience

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Sep 2018 - **University of Massachusetts Amherst, Amherst, MA.**

May 2019 Programming Methodology *Teaching Assistant*, Mathematical Foundation for Informatics *Teaching Assistant*

Aug 2016 - **Trinity University, San Antonio, TX.**

May 2018 Principles of Computer Science II *Teaching Assistant*, Introduction to Programming Logic *Teaching Assistant*, Principles of Computer Science II *Teaching Assistant*

## Awards & Scholarships

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July 2019 **David W. Stemple Scholarship in Computing**, *University of Massachusetts Amherst*.

Provides support to a first-year graduate student in Computer Science pursuing a Ph.D. in Systems research.

May 2019 **UMass CICS Women's Travel Grant**, *University of Massachusetts Amherst*.

Awarded to UMass CICS women to assist with conference travel expenses.

May 2019 **UMass CICS Travel Grant**, *University of Massachusetts Amherst*.

Awarded to UMass CICS students to assist with conference travel expenses.

April 2019 **PLISS Studentship**.

Awarded to new programming languages and systems researchers to attend the 2019 Programming Languages Implementation Summer School (PLISS).

Nov 2018 **PLMW and POPL 2019 Scholarship**, *SIGPLAN*.

Awarded to new programming languages researchers to attend the 2019 Programming Languages Mentoring Workshop (PLMW) and Principles of Programming Languages Conference (POPL).

Mar 2018 **2018 UMass CICS Fellowship**, *University of Massachusetts Amherst*.

Awarded to an outstanding graduate student applicant within the UMass CICS applicant pool.

## Relevant Coursework

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**Completed at Northeastern University.**

History of Programming Languages

**Completed at University of Massachusetts Amherst.**

Programming Languages, Systems, Research Methods, Algorithms, Artificial Intelligence, Game Programming, Networking

**Completed at Trinity University.**

Programming Languages, Operating Systems, Big Data and Machine Learning, Software Engineering, Principles of Functional Languages, Theoretical Computer Science, Principles of Computer Design, Data Abstraction, Game Theory, Discrete Data Structures

## Service

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- 2021 EuroSys 2021 Shadow PC Member
- 2020 Mentor to 3 first-year UMass CICS PhD students  
UMass CICS PhD applicant support program reviewer  
Northeastern University PhD applicant support program reviewer  
#ShutdownPL @ ICFP volunteer  
ShutdownPL volunteer
- 2019 Mentor to 1 first-year UMass CICS PhD student  
Winter Simulation Conference poster session reviewer