

Lucas Eduardo Morales

lucasem.com • github.com/lucasem • lucas@lucasem.com

Topics

Artificial Intelligence	Distributed Systems	Performance Engineering	
<ul style="list-style-type: none">Program inductionGenerative modelsBayesian inferenceConvex optimizationMonte Carlo methods	<ul style="list-style-type: none">Deep learningSparse codingQ-learningLogic programmingConstraint programming	<ul style="list-style-type: none">NetworksConsistencyDecentralizationFault-toleranceBlockchain	<ul style="list-style-type: none">ProfilingControl flow optimizationCache optimizationStrong SpecificationsType theory

Education

Massachusetts Institute of Technology <i>Master of Engineering in Artificial Intelligence</i> <i>Bachelor of Science in Computer Science and Engineering</i>	Cambridge, MA 2018 2017
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Experience

MIT Computational Cognitive Science Group <i>Researcher</i> <ul style="list-style-type: none">Designed, implemented, and experimented with a knowledge abstraction for automatic contextual learning inspired by theories of cognitive architecture and emergent patterns in linguistics and sociology — docs.lucasem.com/contextAnalyzed and experimented with systems for program induction and generative probabilistic modeling.	Cambridge, MA 2016-2017
MongoDB <i>Software Engineering Intern</i> <ul style="list-style-type: none">Designed and implemented the command-line tool for interacting with MongoDB Stitch, a backend-as-a-service.Implemented complex conditional readability in aggregation pipelines for user-based data restrictions.Designed and implemented new features for dumping, restoring, monitoring, and benchmarking MongoDB instances.	New York, NY 2016-2017
The Computational Fabrication Group - MIT CSAIL <i>Software Engineer, Undergraduate Researcher</i> <ul style="list-style-type: none">Designed and implemented a distributed computing system with an interface intended for execution of functional material mappings on 3D geometries to yield input for multi-material 3D printers.Created a concurrent collaborative web-based framework for multi-material 3D model design.	Cambridge, MA 2015
edX <i>Software Engineer</i> <ul style="list-style-type: none">Developed a drag-and-drop problem type and accompanying problem builder.Improved error handling to prevent silent failures and present tracebacks when using the SDK.	Cambridge, MA 2014
Open Source Community <i>Contributor</i> <ul style="list-style-type: none">lucasem/lambda-CL – Created and maintain a tool to convert between expressions of λ-calculus and combinatory logic.lucasem/workerpool – Created and maintain a Rust library for worker-based parallelization.lucasem/escaper – Created and maintain a Go library for highly configurable format strings.lucasem/sdas – Co-created a web-based simulator for synchronous distributed algorithms.rust-lang/rust – Improved standard library documentation for synchronization primitives.kynelee/argen – Co-created a tool for generating argument-parsing logic in C.... and many more projects!	The Internet 2014-2017
MIT MedLinks - Residential Director SigEp MA Delta Chapter - President	Cambridge, MA 2015-2017 Boston, MA 2015-2016

Relevant Coursework

- 18.408 - Algorithmic Aspects of Machine Learning
- 9.S915 - Probabilistic Computing
- 9.520 - Statistical Learning Theory and Applications
- 6.824 - Distributed Computer Systems Engineering
- 6.172 - Performance Engineering of Software Systems

Languages

- C
- Go
- Java
- Haskell
- Scheme
- C++
- Rust
- OCaml
- Python
- Javascript