

# Porter Glines

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## Education

### Master of Computer Science | Idaho State University

May 2022 | Pocatello, ID

4.0 GPA, Phi Kappa Phi

Thesis: *Imposing Structure on Generated Sequences: Constrained Hidden Markov Processes*

Graduate Teaching Assistantship 2020-2021 and 2021-2022

Outstanding Graduate Student 2021-2022

Coursework: Computational Theory, Software Testing, Empirical Software Engineering, Advanced Algorithms, Machine Learning, Compilers, Graphics, Quantum Programming

### Bachelor of Computer Science | Idaho State University

Dec 2019 | Pocatello, ID

Graduated *cum laude* with a minor in *Mathematics*

## Experience

### Research and Teaching Assistant | Idaho State University

2019 - 2022 | Pocatello, ID

Collaborated on generative models in *Python* and *Rust*. Tutored and graded for upper-division and graduate courses, including *Computational Theory*, *Advanced Algorithms*, and *Machine Learning*.

### IT Student Supervisor | Idaho State University

2016 - 2019 | Pocatello, ID

Validated and updated PowerShell scripts to facilitate labs' transition to Windows 10. Supervised and trained IT Support Technicians at ISU and retained an in-depth knowledge of Windows and MacOS to support users across campus.

## Projects (hosted on GitHub)

### Constrained Hidden Markov Model (Master's Thesis)

Written in *Rust* with high test coverage. Performance is **10x** over a previous Python implementation. *Generated musical sequences* styled after Bach's Chorales. Generated music compared favorably against an Anticipation-RNN (recurrent neural network) in an IRB-approved survey.

### Mnemonic Device Generator using Markov chains

*C++ multi-threaded* program generating natural language mnemonic devices. Communicates through IPC to a *Django* backend that serves a dynamic frontend — presented at ICCO's 2019 conference.

### Pomodoro: iOS/watchOS Tasks and Focus Timer App

Models the Pomodoro technique developed by Francesco Cirillo. Utilizes unique UI to drag and drop tasks to an interval timer progress bar. Uses Apple's declarative *SwiftUI* framework and *CoreData*.

## Publications

Glines, P., Griffith, I., & Bodily, P. M. (2021). Software Design Patterns of Computational Creativity: a Systematic Mapping Study. *Proceedings of the 12th International Conference on Computational Creativity*, pages 218-221.

Glines, P., Biggs, B., & Bodily, P. M. (2020). A Leap of Creativity: From Systems that Generalize to Systems that Filter. *Proceedings of the 11th International Conference on Computational Creativity*, pages 297-302.

Glines, P., Biggs, B., & Bodily, P. M. (2020). Probabilistic Generation of Sequences Under Constraints. *Proceedings of the 1st Intermountain Engineering, Technology, and Computing Conference*, pages 135-140.

Bodily, P. M., Glines, P., & Biggs, B. (2019). "She Offered No Argument": Constrained Probabilistic Modeling for Mnemonic Device Generation. *Proceedings of the 10th International Conference on Computational Creativity*, pages 81-88.

## Links

[github.com/po-gl](https://github.com/po-gl)

[linkedin.com/in/porter-glines](https://linkedin.com/in/porter-glines)

[porterglines.com](https://porterglines.com)

## Languages

Python — 

Rust — 

Go — 

Swift — 

C++ — 

JavaScript — 

## Skills / Familiar With

Machine Learning / AI

Transformers / RNNs / CNNs

iOS Development

SwiftUI / UIKit / CoreData

Agile / Scrum

Clean Code

Test-driven Development

Vim

CI/CD

Unix command line

Bash Scripting

MacOS and Windows

SQL

L<sup>A</sup>T<sub>E</sub>X

Academic Conference  
Reviewing