

# Chris Barrick

A.I. SYSTEMS ENGINEER · DATA SCIENTIST

Athens, GA

☎ (828) 342-2580 | ✉ cbarrick1@gmail.com | 📷 cbarrick | 🌐 csb1024

“Write programs that do one thing and do it well. Write programs to work together.”

## Skills

**Languages** Python, Prolog, Rust, Go, Java, JavaScript (Node.js), SQL  
**Platforms** Google Cloud Dataproc, Anaconda, Debian/Ubuntu, Arch Linux  
**Technologies** PyTorch, Tensorflow, Spark, Hive, netCDF/HDF5, CLP(FD), Scikit-learn, NLTK, Jupyter, Docker, Git

## Experience

### UGA Institute for Artificial Intelligence

RESEARCH ASSISTANT

Athens, GA

Aug. 2016 - PRESENT

- Developing predictive, deep learning models using 2TB of forecast data with PyTorch.
- Developed a data ingestion pipeline for NOAA weather forecasts in Python with xarray and netCDF.

### Hayver

PROLOG DEVELOPER AND INTERN

Atlanta, GA

May. 2017 - Aug. 2017

- Advised business leaders in the transition from a legacy Prolog system into a Java-based microservice architecture.
- Drafted a data model with support for dynamic objects on a SQL backend.

### Digital Envoy

SOFTWARE DEVELOPMENT INTERN

Atlanta, GA

May. 2016 - Aug. 2016

- Developed a system on Hive to alert for suspicious changes to weekly database releases.

### Engage

FRONTEND WEB DEVELOPER

Clayton, GA

Jul. 2013 - Jun. 2014

- Prototyped mobile apps using web technologies with Apache Cordova.

## Education

### University of Georgia

M.S. ARTIFICIAL INTELLIGENCE

Athens, GA

Aug. 2016 - PRESENT

- Thesis on predictive models for solar energy production using 2TB of NOAA forecast data.
- Interdisciplinary coursework in Computer Science, Linguistics, and Philosophy.
- **Courses:** Algorithms, Generative Syntax, Philosophy of Language, Knowledge Based Systems, Decision Making under Uncertainty, Biomedical Informatics, Data Science II, Applied Machine Learning, Advanced Data Analytics, Data Science Practicum

### University of Georgia

COMPUTER SCIENCE AND COGNITIVE SCIENCE

Athens, GA

Aug. 2011 - Dec. 2015

- Double major with an area of emphasis in Artificial Intelligence.
- Developed a conditional term-rewriting system in Prolog as a directed study in AI.
- **Select courses:** Model Theory, Symbolic Programming, Evolutionary Algorithms, Artificial Intelligence, Linear Algebra, Multivariable Calculus, Cognitive Psychology, Philosophical Psychology, Computer Networks, Databases

## Organizations

### DELUG: Deep Learning @ UGA

MEMBER & OFFICER

Athens, GA

Nov. 2017 - Present

- Spoke at the club's inaugural meeting on vanishing gradients and tips to avoid them.
- Became an officer in Feb. 2018.

# Projects

---

## Hydrus: Scalable document classification in Spark

UGA

[github.com/dsp-uga/hydrus](https://github.com/dsp-uga/hydrus)

2018

- Assignment for UGA's Data Science Practicum; prefab algorithms disallowed (e.g. MLlib).
- Implements Gaussian Naive Bayes and Logistic Regression from low-level RDD operations.
- Deployed to Google Cloud Dataproc.

## Evo: Parallel genetic algorithms in Go

UGA / Personal

[github.com/cbarrick/evo](https://github.com/cbarrick/evo)

2016

- Support for fine-grain parallelism in arbitrary topologies.

## Rw-Prolog: An equational logic programming language

UGA

[github.com/cbarrick/Rw-Prolog](https://github.com/cbarrick/Rw-Prolog)

2015

- Extends Prolog's unification semantics with support for conditional term-rewriting.
- Implemented as a meta-interpreter in Prolog.
- Developed a regular expression engine using the language.

## Plum: A logical agent for the board game *Clue*

UGA

[github.com/cbarrick/plum](https://github.com/cbarrick/plum)

2014

- Communicates with a human operator in natural language (English).
- Models knowledge as a constraint satisfaction problem with CLP(FD).
- Uses path-finding and probability estimates to make decisions.
- Super-human performance.

# Publications

---

## PUBLICATIONS

2017    **Solar Radiation Prediction Improvement Using Weather Forecasts.** Sanders, Barrick, Maier, Rasheed.

IEEE ICMLA

## PRESENTATIONS

2017    **Vanishing Gradients.** [goo.gl/B7x3YF](https://goo.gl/B7x3YF)

DELUG

2016    **Artificial Intelligence.** Given to high-school students. [goo.gl/9KX3kU](https://goo.gl/9KX3kU)

RGNS Science club