Chris **Barrick**

A.I. Software Engineer · Data Scientist

Athens, GA

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"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

Athens, GA

Research Assistant

Aug. 2016 - PRESENT

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

Hayver

Atlanta, GA

Prolog Developer and Intern

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

Atlanta, GA

Software Development Intern

May. 2016 - Aug. 2016

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

Engage

Clayton, GA

Frontend Web Developer

Jul. 2013 - Jun. 2014

- Prototyped mobile apps using web technologies with Apache Cordova.

Education

University of Georgia

Athens, GA

M.S. Artificial Intelligence

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

Athens, GA

Computer Science and Cognitive Science

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

Athens, GA

Core Member & Officer in 2018

Nov. 2017 - Present

- Presented the club's inaugural lecture on vanishing gradients and tips to avoid them: Xavier initialization, ReLU, Batch Norm, and SELU.

Projects

Hydrus: Scalable document classification in Spark

UGA

`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 / Hobby

`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` *2015*

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

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

UGA

`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.** `https://goo.gl/B7x3YF`. *DELUG*

2016 **Artificial Intelligence.** Given to high-school students. `https://goo.gl/9KX3kU`. *RGNS Science club*