

Amittai F. Aviram

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Education

Yale University. PhD, Computer Science.

Dissertation project: Deterministic Parallel OpenMP. Advisor: Bryan Ford.
Co-author, USENIX OSDI Best Paper Award, 2010.

Columbia University. BS, Computer Science.

Theory track. Russell C. Mills Award. Contributed to NLP faculty research project on Arabic morphology.

Yale University. PhD, English Language and Literature.

Columbia University. BA, English and Comparative Literature.

Coursera Certificates

Neural Networks and Deep Learning. 2 January 2021.
Machine Learning. 9 August 2016.

Current Research

How Language Signals Cognitive State

With Owen Rambow (SUNY-Stony Brook). Application of deep learning models for the automatic detection of surface indicators of the speaker's beliefs and sentiments in spoken and written utterances.

Publications

Deterministic OpenMP for Race-Free Parallelism

With Bryan Ford. May 2011. 3rd USENIX Workshop on Hot Topics in Parallelism (HotPar '11)

DOMP: Deterministic OpenMP

With Bryan Ford. Oct 2010. Poster Session. 9th USENIX Symposium on Operating System Design and Implementation (OSDI '10)

Determinating Timing Channels in Compute Clouds

With Sen Hu, Bryan Ford, and Ramakrishna Gummadi. Oct 2010. Proceedings of the 2010 ACM Workshop on Cloud Computing Security (CCSW '10).

Efficient System-Enforced Deterministic Parallelism

With Shu Chun Weng, Sen Hu, and Bryan Ford. Oct 2010. Proceedings of the 9th USENIX Symposium on Operating System Design and Implementation (OSDI '10).

Teaching Experience

Boston College. Chestnut Hill, MA. Visiting Associate Professor. January 2021 – Present.

- Undergraduate teaching, including Computer Systems (CSCI2271) and Computer Science II (CSCI 1102). Experimented with a “flipped” format in Computer Systems.
- Research in natural language processing ongoing since summer 2021 in collaboration with Owen Rambow (SUNY-Stony Brook). Supervising BC undergrads through independent study programs.

Boston University. Boston, MA. Adjunct Instructor. 2020.

- **Parallel Computing and Programming** (CS591A1). Fall 2020. Introduction to concurrent programming and systems, including distributed and shared memory, synchronization, parallel algorithms, scalability analysis, and programming techniques such as threads, OpenMP, CUDA, and message passing, for advanced undergraduate and master's-level students.

Wentworth Institute of Technology. Boston, MA. Adjunct Instructor. 2016 – 2017.

- **Programming Paradigms and Systems** (CPSC 7050). Oct 2016 and Oct 2017. Various languages. All online. Masters level. Developed syllabus, online lectures, assignments, exams, and all course materials. Intensive, project-driven, 7-week course, introducing students to four language paradigms, as well as parallel, distributed, real-time, and embedded systems.
- **Computer Science I** (CPSC 1000) May 2017. Java. In person. Undergraduate. Introduction to programming, assuming no prior background.

Yale University. New Haven, CT. Teaching Fellow. 2008 – 2010.

- **Introduction to Programming** (CPSC 112) Java. Undergraduate. Under Drew McDermott. Basic. Assumed no prior background.
- **Introduction to Computer Science** (CPSC 201). Haskell. Undergraduate. Under Paul Hudak. Gateway to the CS major—introduction to CS concepts.

University of South Carolina. Columbia, SC Associate Professor, English & Comparative Literature (Previous Career).

- Developed and taught a wide range of courses from basic undergraduate to PhD level.
- Tenured. Fulbright Senior Scholar, Bamberg, Germany. Various publications.

Software Industry Experience

Wayfair. Boston, MA. Software Engineer II.

April 2019 – October 2020. Sales & Operations Planning Team, implementing logistics analysis and modeling. Full-stack development of a distributed versioned data access and manipulation platform (Python, TypeScript/React). Completed a project to calculate supply chain estimated times of arrival using multiple data sources in parallel (object-oriented PHP, SQL).

Medtronic. Boston, MA. Senior Software Engineer.

September 2016 – April 2019. Surgical robotic system research and development lab. Created Simulink real-time logging tools with MATLAB programs that generate C++ code at build time. Collaborated on system integration diagnostic tools and code generation for interprocess communication. (C++, C, MATLAB, Simulink, BASH, CMake, Protocol Buffers, FlatBuffers).

MathWorks. Natick, MA. Senior Software Engineer.

September 2012 – May 2016. Code Generation Intermediate Representation Team, supporting code generation products. Developed tools for ensuring safety and correctness of generated code. (C++, Perl)

Summer internships at Google (New York, NY), Ellington Management Group (Old Greenwich, CT), and Microsoft Research (Redmond, WA).

2006 – 2011. Various aspects of systems programming and testing.