Curriculum Vitae

Jacob Neumann
jacobneu@andrew.cmu.edu

Education

MS, Logic, Computation, and Methodology *August 2019 - Present*
Carnegie Mellon University, Department of Philosophy *Pittsburgh PA*
– Expected Completion: May 2020

BS, Mathematics (Discrete Math and Logic) *August 2015 - May 2019*
Carnegie Mellon University, Department of Mathematical Sciences *Pittsburgh PA*
– Additional major in Logic & Computation
– Mellon College of Science Honors

Interests

Topological modal logic, formal epistemology, mathematical logic, philosophy & foundations of mathematics, dynamic logic, denotational semantics, functional programming, categorical logic, higher category theory, homotopy type theory

Research

Semantics for Nondeterministic Program Construction *April 2018 - Present*
Master's Thesis
– Advisor: Adam Bjorndahl
– Purpose: Adapt tools from topological modal logic and formal epistemology to study the dynamics of nondeterministic programs. Specifically, develop logical methods to study nondeterministic program constructors in a dynamic topological setting.
– Expected Defense: Spring 2020

Academic & Teaching Positions

Instructor [Future] *May - June 2020*
Carnegie Mellon University, Computer Science Department
– Course: 15-150 Principles of Functional Programming
– Expected Duties: Design course content, deliver lectures, design & administer exams, interview & hire course staff, oversee grading, meet with students, perform course administration duties.

Co-Instructor, Guest Lecturer *March 2019 - Present*
Carnegie Mellon University
– Course: 98-317 Hype for Types
– Duties: Deliver lectures for and administer a student-run course covering advanced topics in theoretical computer science at the level of second-year undergraduates.
– Topics lectured on: Dynamic Logic/Hoare Logic, Category Theory, Categorical Semantics of the Simply-Typed Lambda Calculus, Homotopy Type Theory

Academic & Teaching Positions (continued)

Teaching Assistant *August 2019 - Present*

Carnegie Mellon University, Department of Philosophy

– Course: 80-100 Intro to Philosophy

– Instructor: Simon Cullen

– Duties: Hold weekly discussion sections (and create materials for them), grade student work and provide useful feedback, hold regular office hours.

– Delivered one lecture

Grader *August 2019 - Present*

Carnegie Mellon University, Department of Philosophy

– Course: 80-310 Formal Logic

– Instructor: Adam Bjorndahl

– Duties: Grade student work and provide useful feedback, hold regular office hours.

Head Teaching Assistant *November 2017 - December 2018*

Carnegie Mellon University, Computer Science Department

– Course: 15-150 Principles of Functional Programming

– Instructors: Stephen Brookes (F18), Michael Erdmann (S18), Dilsun Kaynar (S18), Stefan Muller (M18)

– Duties: Interview and hire course staff, lead staff meetings, direct and coordinate teaching assistant work, oversee development of course materials, teach recitations, hold regular office hours, maintain and operate course infrastructure.

Teaching Assistant *May 2017 - December 2017*

Carnegie Mellon University, Computer Science Department

– Course: 15-150 Principles of Functional Programming

– Instructors: Dilsun Kaynar (M17, F17), Stephen Brookes (F17)

– Duties: Develop and revise course materials, teach weekly recitation, hold regular office hours, grade student work, hold exam review sessions.

EXCEL Group Leader *February 2016 - May 2018*

Carnegie Mellon University Academic Development

– Courses supported: 21-127 Concepts of Mathematics, 21-259 Calculus in Three Dimensions

– Duties: Hold weekly content review sessions with a fixed group of students, develop practice materials, lead exam review sessions, engage in ongoing training.

Grader *August 2016 - May 2017*

Carnegie Mellon University, Department of Mathematical Sciences

– Course: 21-127 Concepts of Mathematics

– Duties: Grade student work and provide useful feedback.

Skills

Programming Languages

- Python (experienced)
- Standard ML (experienced)
- Bash (intermediate)
- Javascript (basic)
- PHP (basic)
- C (basic)

Scripting & Display Languages

- LaTeX (experienced)
- HTML & CSS (experienced)

Interactive Theorem Proving

- Lean (intermediate)
- Agda (basic)

Technologies

- git (experienced)
- Autolab (experienced)
- Piazza (experienced)
- Gradescope (experienced)
- Unix command line (intermediate)