

# ARNAV SOOD

## overview

I am a researcher and programmer working in computational economics. My projects include [codebases](#) for academic papers, open-source [software packages](#), and [lectures](#).

I have extensive experience with differential equations, Julia, and PyTorch. The latter includes logging frameworks, model debugging, execution on cloud instances like Amazon EC2, and additional tools like PyTorch Lightning.

## employment affiliations

**Consulting Researcher/Programmer** June 2020 — Present

Clients Include: UBC, QuantEcon

**University of British Columbia** June 2018 — June 2020

Predoctoral Fellow, supervised by [Jesse Perla](#)

Guest Lecturer

Member of [Centre for Artificial Intelligence Design and Action](#)

**QuantEcon** Jan. 2019 — Present

Lead Developer

Worked on lecture content, open-source packages, and infrastructure

## education

**University of British Columbia**

Economics Courses, June 2018 — June 2020

**New York University**

B.A. Mathematics, 2018

Minors in Economics, Philosophy

## publications

**Exploiting Symmetry in High-Dimensional Dynamic Programming** w. coauthors

Uses PyTorch to accelerate the solution of economic models, by embedding economic facts in the neural approximator

## software

**Expectations.jl** [Poster](#) from JuliaCon 2020

Provides efficient expectation operators for univariate distributions, using Gaussian quadrature

**InstantiateFromURL.jl** [Talk](#) from JuliaCon 2020

Allows Julia notebooks to refer to online dependency information, boosting reproducibility/mobility

**PkgUtils.jl**

Various package utilities

## other writing

**Optimal Stopping and Linear Complementarity** with Jesse Perla

Demonstrates how optimal stopping problems can be solved more efficiently as LCPs than as a free-boundary problem

[Computational Appendix](#)

**Local Perturbation**

Applied comparative statics

Daily Science Fiction

**Customer Feedback (Secondhand Alchemical Goods)**

Discussion of various transmutation schemes  
Review

Daily Science Fiction

**Bounded Rationality**

Causes and effects of cognitive constraints  
Pushcart Prize nominee

Blanket Sea

activities

**Free Geek Vancouver**

Volunteer Tech Support

**Splash!**, Various Universities

Volunteer Teacher

Taught free one-hour classes to high-school students  
Subjects included information economics, statistics, abstract algebra, philosophy of mind, and Play-Doh