# Omar S Navarro Leija

## Education

**University of Pennsylvania** 9/2016 – 5/2022 (expected)
PhD Computer Science
Advisor: Joseph Devietti

**University of Pennsylvania** 9/2016 - 12/2017
MSE Computer Science

**University of Nevada, Las Vegas** 9/2011 – 5/2016
BS Computer Science, Math Minor

## Publications (CS First)

- **Reproducible Containers.** Omar S. Navarro Leija, Kelly Shiptoski, Ryan G. Scott, Ryan R. Newton, Joseph Devietti. ASPLOS 2020
- **A Monad for Deterministic Parallel Shell Scripting.** Ryan Scott, Omar S. Navarro Leija, Joseph Devietti, Ryan R. Netwon. OOPSLA 2017
- **GPUDrano: Detecting uncoalesced accesses in GPU programs.** Rajeev Alur, Joseph Devietti, Omar S. Navarro Leija, Nimit Singhania. CAV 2017

- **Transcriptome analyses of tumor-adjacent somatic tissues reveal genes co-expressed with transposable elements.** Nicky Chung, G. M. Jonaid, Sophia Quinton, Austin Ross, Corinne E. Sexton, Adrian Alberto, Cody Clymer, Daphnie Churchill, Omar S. Navarro Leija, Mira V. Han. Mobile DNA 2019
- **Measuring accelerated rates of insertions and deletions independent of rates of nucleotide substitution.** Omar S. Navarro Leija, Sanju Varghese. & Mira V. Han. Journal of Molecular Evolution 2016
- **Agile multiscale decompositions for automatic image registration.** James M. Murphy, Omar S. Navarro Leija, Jacqueline Le Moigne. Proc. SPIE 9840, Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XXII 2016

## Experience

**VMware Research** – Research Intern Summer 2020
• **Differential Datalog**: bottom-up, incremental, in-memory, typed Datalog engine.
• Project: Understanding Parallel Scaling for DDlog programs.

**Mozilla Corporation** – Research Intern Summer 2019
• **Servo**: An experimental parallel web browser written from scratch in Rust!
• Project: Taming intermittent tests failures with lightweight record and replay.

**NASA** – Software Engineering Intern Summer 2015
• Shearlet features for remotely sensed image registration.
• Project: Fast Shearlet Transform implementation in C.

**UNLV Han Lab**– Bioinformatics Research Assistant 8/2014 - 7/2016
• Research novel algorithms for phylogenetic and conservation score inference.
• Implemented data processing algorithms and pipelines in C and Python.

**UNLV Han Lab**– NSF REU Intern Summer 2014
• Evolutionary constraint on insertions/deletions in the genome.
• Project: Extended C framework to estimate rate of insertions and deletions in genomes.

## Skills

- Rust, C, C++, Python, Haskell, Java
- Linux Systems Programming
- Spanish (Native)

## Other Research

- **Taming Intermittent Tests Failures With Lightweight Record and Replay.** Omar S. Navarro Leija, Alan Jeffrey. https://arxiv.org/abs/1909.03111 9/2019
- **ProcessJ compiler: Running millions of concurrent processes**, Omar Navarro Leija; Austing Ross and Jan Pedersen. UNLV CS 2016 Senior design project. 5/2016

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## Teaching

- Colorado Gold Rust: Rust Bridge - Teacher
- UPenn CIS198 Fall 2019: Rust Programming - Instructor
- UPenn CIS198 Fall 2018: Rust Programming - Instructor
- UPenn CIS552: Haskell Programming – Teaching Assistant

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## Technical Talks

- **Colorado Gold Rust** - "Futures From the Ground Up (For Beginners, by Beginners)"

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## Recognitions

- NSF Graduate Research Fellowship Program 2017
- UNLV Senior design competition 2016 1st place CS award.
- NASA GSFC Poster Presentation 1st place award for Operations.
- Nevada NASA Space Grant 2015.
- Nevada Millennium Scholarship 2011-2016

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