

# Tristan Konolige

Seattle, WA  
github.com/tkonolige

## TECHNICAL STRENGTHS

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**Computer Languages** C++, Python, Rust, Haskell, Julia, CUDA  
**Areas of focus** Linear System Solvers, Machine Learning, Compilers,  
High Performance Computing, Distributed Memory Algorithms, Multigrid

## EXPERIENCE

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**OctoML** July 2020 –  
*Principal Engineer* Seattle, WA

- Technical lead for group of 5 working on improving performance of customer ML models
  - Improved performance of customer models past what they could achieve in-house
  - Mentored teammates on how to diagnose slow models and make improvements from the graph level down to the kernel level
- Implemented state of the art CPU and GPU kernels for matrix multiplication, random number generation, and sparse linear algebra in a cross-platform IR
- Large open source contributions to tooling and profiling in Apache TVM (tuning ML compiler)
  - Added C++ backtraces to crashes and errors
  - Ensured that benchmarking was accurate and consistent across CPU and GPU
- Evaluated applicability of multiple research papers to improve tuning speed

**University of Colorado Boulder** January 2015 – May 2020  
*Research Assistant, PhD Student* Boulder, CO

- Researched algorithms for large scale network analysis (received best paper award at PASC '18)
- Improved state of the art performance on large nonlinear optimization problems in computer vision

**Arraiy** Summer 2018  
*Software Engineer* Palo Alto, CA

- Improved performance of 3D reconstruction via faster nonlinear optimization algorithms

**Past:** Lawrence Livermore National Lab, Intern '16; Research assistant in UCSB CS labs; Industrial Perception, Inc, Software Engineer.

## EDUCATION

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**University of Colorado at Boulder** Fall 2015 – Spring 2020  
*Ph.D. in Computer Science*

**University of California, Santa Barbara** Fall 2011 – Spring 2015  
*B.S. in Computer Science*