

# ADHITHYA BHASKAR

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## EDUCATION

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### University of Southern California

May 2021 - Present

Ph.D. in Industrial and Systems Engineering

**Area of research:** Computational reproducibility and knowledge verification in machine learning

**Coursework:** Applied Natural Language Processing, Predictive Analysis, Data Mining

**Advisor:** Victoria Stodden

### University of Illinois at Urbana-Champaign

August 2016 - December 2020

B.S. in Mechanical Engineering, Minor in Computer Engineering

## EXPERIENCE

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### National Center for Supercomputing Applications

Urbana, IL

#### SPIN Intern – Containerization and Continuous Integration

August 2017 - July 2019

- Assessed implementation feasibility of Continuous Integration for computational reproducibility and co-authored the article – [Scientific Tests and Continuous Integration Strategies](#)
- Researched and documented software advantages, disadvantages and security vulnerabilities of Linux containers (Docker & Singularity), virtual machines, systrace and ptrace
- Decreased result verification time by 60% by automating parameter testing, plot generation and result validation leading to the co-authorship of – [Introducing Three Principles and the Reproduction Package in the Philosophical Transactions A](#)

#### SPIN Intern – Assessing computational reproducibility

June 2017 - August 2017

- Tested reproducibility of articles from the Journal of Computational Physics and Material Science and co-authored the article – [An Empirical Evaluation of Computational Reproducibility](#)
- Received the Jerry Fiddler Innovation Fellowship for interdisciplinary research articles

## PROJECTS

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### [Los Angeles crime and arrests - data analysis](#) *R - tidyverse, ggplot2, gganimate*

- Assessed discrepancies in victim and perpetrator demographics with statistical tests
- Determined primary factors that perpetuate thefts using decision tree analysis
- Analysed and created animated data visualizations for timeseries data to identify patterns in crimes by time of day, month and year

### **Operating system development** *C, x86*

- Implemented interrupts and kernel initialization of IDT, GDT, paging, keyboard and RTC drivers
- Developed a read/write filesystem and function interfaces for system calls and user programs
- Implemented multiple terminals and switching with virtual and video memory mapping

### **Automated Shopping Bots** *Python, Keras, Javascript, Linux*

- Developed automated online shopping bots per client specifications using Selenium & Requests
- Decreased checkout time from 20s to 500ms through scripting and CAPTCHA automation
- Reduced latency by 15% by hosting on multiple VPS locations

## SKILLS

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Programming Languages: Python, Bash, C, C++, x86, MATLAB

Tools: Docker, Singularity, TravisCI, Git, Creo, Fusion360

Languages: English, Japanese (Intermediate), Tamil, Hindi