

Pradyumna Shome

📞 +1 (217) 819 8119 • ✉ pradyumna.shome@gmail.com
🌐 pradyumnashome.com • in shomep • 🌐 PradyumnaShome

About

I am an undergraduate studying **Computer Science** at the **University of Illinois at Urbana-Champaign**, expecting to graduate in **May 2021**. On campus, I am a **Research Assistant** at two labs, and a **Lead Course Assistant** for **CS 241: System Programming**. I have industry experience through software engineering internships at **Virtusa**, **Salesforce**, and (in 2020) **Facebook**, and have made a strong technical impact at college organizations such as **HackIllinois** and the **Reflections Projections Technology Conference**.

Currently interested in hearing more about research / internship opportunities in the fields of **machine learning** and **security**, I hope to attend graduate school in the future.

The idea of graduate school appeals to me because I believe it will allow me to work on research projects that may not be accessible to someone with solely an undergraduate degree, and gives me an opportunity to potentially teach computer science at the collegiate level. Having taken on multiple roles being on **course staff** over the past few years, I have come to realize that I find **teaching** a fulfilling activity, and hope to continue being able to do so in the future, as I develop my own abilities.

Thus far, one of the aspects of research that I am enjoying the most is the **intellectual freedom** I am afforded to **independently investigate open problems**, in a field I care about. It is an experience that is difficult to have while working as a software engineer (another popular career option for those in my field), where the scope of one's contribution is already defined, and where one is often restricted to implementing ideas conceived by someone else.

Education

University of Illinois at Urbana-Champaign
B.S. Computer Science, James Scholar, Dean's List

Champaign-Urbana, IL, USA
August 2017–May 2021

National Public School, HSR Layout
High School Diploma, Science with Computer Science

Bangalore, KA, India
June 2013–May 2017

Experience

Research.....

Blender Lab, NLP Research at Illinois

Champaign-Urbana, IL, USA

Research Assistant | Advised by Prof. Heng Ji

August 2019–Present

- Conducting literature survey on event schema induction from multimedia, multilingual representations using graph neural nets, and one-shot learning
- Annotating videos and creating baselines for Yoga Robot; learning more about Attention Models and Transformers
- Participate in NLP Reading Group and Seminar - discussion of recent papers in the field of information extraction and natural language understanding

FPSG, Security and Privacy Research at Illinois

Champaign-Urbana, IL, USA

Research Assistant | Advised by: Prof. Christopher W. Fletcher

August 2019–Present

- Working on defenses to security vulnerabilities in the training of deep neural networks (DNNs)
- Investigating the effects of dynamic overclocking and cache compression on memory access times
- Building simulator to protect data leakage using dynamic information flow tracking (DIFT) tools
- Conducting literature survey on vulnerabilities relating to microarchitectural side-channel attacks

Professional.....

Salesforce

San Francisco, CA, USA

Software Engineering Intern, Records Experience | Platform Cloud

June 2019–August 2019

- Created web app to automatically suggest test plans for a new user story, through natural language processing of the acceptance criteria, using JavaScript (ES2017), Apex, SOQL, Web Components, and Jest for unit tests
- Reduced 13 engineering work days spent manually compiling test plans per sprint planning session
- Developed UI for Einstein Modeling's first Business Card Scanner, that uses OCR and Named Entity Recognition to automate the organization of business contact information.
- Ideated and built intern-matching social app using Python and Jinja, that helps bolster personal connections and surfaces common interests.

Virtusa

New York, NY, USA

Software Engineering Intern, Media & Content Division

July 2018–August 2018

- Created serverless cloud app and supporting data lake to model, process, and aggregate computer vision data for predictive analytics, using Python, AWS Lambda, Amazon API Gateway, and Amazon DynamoDB
- Implemented reference business intelligence (BI) tool, using NLP generative models (LDA, NTM) to gain insights on social media reactions to popular films and TV shows, using Boto 3, Amazon QuickSight, and Amazon SageMaker

HackIllinois

Champaign-Urbana, IL, USA

Systems Developer

April 2018–February 2019

- Developed Go microservices to enable user authentication, authorization, event registration, and notifications via mobile app clients, including CI / CD pipeline (Travis, AWS CodePipeline, Amazon ECS).
- Added features such as user mocking, OAuth single sign-on, multi-tier decision review, templated mail, error handling and CRUD (with MongoDB).
- Created QR code scanner in Android app to manage event check-in and track participant statistics for meals and mini-events.

Reflections | Projections

Champaign-Urbana, IL, USA

Lead Web Developer

January 2018–September 2018

- Principal full-stack developer of website written in ES6 using React, Webpack, and Nginx.
- Integrated microservices-based in-house registration API that brought in 2200+ applicants.
- Mentored junior developers through code review and pair programming.

Teaching.....

UIUC Department of Computer Science

Champaign-Urbana, IL, USA

Lead Course Assistant, CS 241: System Programming

January 2019–Present

- Lead a lab section, conduct office hours, and develop assignments teaching concepts of Linux system programming
- Contribute content to and maintain course textbook and website, and conduct technical and behavioral interviews for prospective course staff members
- Manage course logistics, onboard and mentor new staff, and answer student questions on online Q&A platform

UIUC Department of Computer Science

Champaign-Urbana, IL, USA

Course Assistant, CS 233: Computer Architecture

August 2018–December 2018

- Hold a discussion section, and conduct office hours to help students learn concepts about computer architecture such as caches, instruction set architectures, (MIPS) assembly programming, instruction-level parallelism, vectorization etc.

Service.....

CS@Illinois SAIL

Urbana, IL, USA

Teacher

March 2019

- Prepared class on functional programming, and parser generators
- The class was about learning the roles and applications of (recursive descent) parsers, as well as learning to write a JSON parser in Haskell that generates a Java class, given boilerplate code such as a Backus-Naur Form (BNF) grammar

CS@Illinois SAIL

Urbana, IL, USA

Volunteer

March 2018

- Helped serve meals, and set up tables for a outreach event that exposes high-schoolers from nearby districts to various aspects of computer science through classes taught by college students

Ashwini Charitable Trust

Bangalore, KA, India

Web Development Volunteer

May 2016–July 2016

- Built mockups of proposed new website from scratch.
- Migrated website to Wordpress, to allow non-technical staff to create and update content.
- Incorporated search engine optimization to better target volunteers and potential donors.

Awards and Distinctions

- **2019**
 - Illinois Engineering Achievement Scholarship
 - Forbes Under 30 Scholar
- **2018**
 - Illinois Engineering Achievement Scholarship
- **2017**
 - AP Scholar with Distinction

Languages

English: Full professional proficiency

Hindi: Native or bilingual proficiency

French: Elementary proficiency

Technical skills

Programming Languages: Python, C, Java, Go, C++, Kotlin, HTML, CSS, JavaScript **Tools + Frameworks:** Cloud (AWS, Firebase, Travis, Serverless, Docker); Databases (MongoDB, MySQL); Web (React, Node.js, Web Components); Version Control (Git, SVN)

Organizations

- Asian American Association (AAA) at UIUC
- Association for Computing Machinery (ACM) at UIUC
- NLP Reading Group at UIUC
- Women in Computer Science (WCS) at UIUC

Hobbies & Interests

Table-tennis, board games, piano performance

Last updated: November 29th, 2019