

# Prerna Rao V

Graduate Student, University of Washington, Seattle

✉ prernar@uw.edu  
🏠 prernarao.github.io

## EDUCATION

---

### University of Washington, Seattle

Masters in Human Centred Design and Engineering

Sep 2022-Present

### PES University, Bangalore

B.Tech in Computer Science and Engineering | *Specialization in Algorithms & Computing Models*

CGPA: 8.41/10 (3.58/4) | 🏆 Prof. CNR Rao Scholarship

Aug 2016 - May 2020

### Centre for Innovation & Entrepreneurship, PES University

Level 1 - Getting Started With Entrepreneurship

Aug 2018 - Dec 2018

## WORK EXPERIENCE

---

### GE Healthcare, Bangalore, India

Software Engineering Specialist

Domain: Clinical Imaging, Application Development, Software Engineering

Description: Web and mobile application to view and manipulate clinical images through a UI.

Sep 2020 - May 2022

### GE Healthcare, Bangalore, India

Software Engineering Intern

Domain: Web/Mobile Application Development, Software Engineering

Description: Internal web applications to access and manage customer and installed base data at GE Healthcare.

Jan - Aug 2020

## PROJECTS

---

### 1. AryaBota: Gradual and Gamified Environment to Learn Programming

Jun 2021 - Present

Mentors: Dr. Viraj Kumar (IISc), Prof. N S Kumar (PESU)

Technologies: Python+PLY, ReactJS, Flask, MongoDB, Google Colab, Vercel, Heroku

Live Prototype: <https://aryabota.vercel.app/>

- › Developed a visual tool to introduce programming concepts to children.
- › Proposed a gamified UI/UX and a domain-specific language with simplified syntax.
- › Designed the language to gradually progress to Python by teaching concepts via levels in the game.
- › Currently evaluating the usability of this tool through workshops for students between grades 6-10.
- › A research paper comprising our initial findings has been accepted at **IEEE EDUCON 2022**.

### 2. Universal Viewer - Zero Footprint

Sep 2020 - May 2022

Organization: GE Healthcare, Mentor: Mohit Kumar

Technologies: Java, JavaScript/TypeScript, KnockoutJS, SpringBoot, Unit Testing, Kubernetes

- › Designed and implemented a feature to save image manipulations and annotations.
- › Ported configuration API implementation from .NET to Java to aid containerization.
- › Implemented Audit Logging as per IHE requirements.
- › Enhanced user experience of translations, transformations, and annotations on the UI.
- › Fixed over 50 bugs, defects, and customer-raised issues.

### 3. Installed Base Repository - Data Management Application

Jun - Aug 2020

Organization: GE Healthcare, Mentor: Amar Patil

Technologies: Java, SpringBoot, Predix PolymerJS, ES6, Docker

- › Developed a web-based application to monitor and update the installed-base data for GEHC.
- › Implemented Java APIs for CRUD operations, and wrote docker scripts to deploy the application.
- › Participated in the Verification & Validation cycle, and worked on fixing defects and bugs.

### 4. Unified Customer Master - Know Your Customer

Jan - May 2020

Organization: GE Healthcare, Mentor: Amar Patil

Technologies: ReactJS, Node.js, ES6, AWS

- › Developed a ReactJS based bolt-on UI to improve customer data management at GE Healthcare.
- › Owned and executed development of workflows within the application, built 9 reusable UI components, and fixed various defects and bugs during testing.

- › Part of the team responsible for releasing MVP-1.
- › Conducted a demo and knowledge-transfer session of the code base to the new team.

## 5. Sketch2HTML: Image Recognition based HTML Generator

Jan - Jun 2020

*Institution:* PES University, *Mentor:* Prof. Vidhu Rojit

*Technologies:* HTML, Machine Learning, Flask, OpenCV, Selenium Web Driver

- › Developed a web application to convert hand-drawn wireframes into usable HTML webpages.
- › Created the UI for the application using HTML5, CSS, and Bootstrap.
- › Used the basics of wireframing, machine learning, and image processing to parse and process the input.
- › Built a Support Vector Machine (SVM) model to classify different HTML elements.
- › Implemented unit-testing for the UI of the application using Selenium Web Driver.
- › Created a ~90 page report ([link](#)) for design, requirements, research, and implementation of Sketch2HTML.

## COMMUNITY SERVICE

---

### 1. Project Sitara Foundation (Core Team)

#### › Organisation Growth and Program Management

Sep 2021 - Present

- Program manager for all collaborations with Vision Empower Trust.
- Leading discussions to improve edTech solutions and build a network of support for our students.
- Active participation in fundraising and organisation expansion.

#### › STEM Teacher-Instruction-Kits (TIKs) for Visually Impaired Students - Team Lead

Sep 2021 - Present

- Currently leading a team of volunteers, in collaboration with Vision Empower Trust, in an effort to develop **Teacher-Instruction-Kits** for visually impaired students (Karnataka and Tamil Nadu State Boards, Class 8-10 Math and Science), to make education more accessible to them.
- These are manuals to assist teachers in delivering complex visual concepts through thought-experiments and tactile activities.

#### › Curriculum Research Mentor to Undergraduate Students - Team Lead

June - July 2021

- Mentored a team of volunteers in an effort to research and develop a curriculum to be delivered via a localized **STEM EdTech series on YouTube**.
- This was done in wake of the Covid-19 pandemic to provide accessible, affordable education to students who lost access to formal education due to the lockdowns.

#### › Math Teacher-Instruction-Kits (TIKs) for Visually Impaired Students

May - Sep 2021

- Developed **Teacher-Instruction-Kits**, in collaboration with Vision Empower Trust, for visually impaired students (CBSE Class 8 Math), to make education more accessible to them.

#### › R&D for Measuring Impact on 21st Century Skills

May 2021

- Conducted research on the impact of current pedagogical practices on students' 21st Century Skills. Worked on designing and testing a learning structure that incorporated critical 21C skills for learners, and methods for the educator to evaluate them.

#### › Foundational English Curriculum Design and Tutoring

Sep - Nov 2020

- Helped research, design, and co-teach, a personalised curriculum aimed at bridging gaps in foundational English - both spoken and written - for middle and high school students.

#### › Math & English Tutor for class 6-10

Jan - May 2019

- Created lesson plans and conducted on-ground lessons for students in classes 6-10.

### 2. Desire Society (Student Volunteer)

Nov 2014 - May 2016

- › Tutored children affected with HIV/AIDS between ages 4-17, in Math, Science & English.
- › Planned and conducted weekly extra-curricular activities to increase engagement and interaction among the children.

## RELEVANT SKILLS

---

- › **Programming Languages** Java, Javascript/ES6, Python, Typescript, HTML5, CSS, PHP
- › **Frameworks** ReactJS, KnockoutJS, NodeJS, Flask
- › **Databases** MySQL, PostgreSQL, MongoDB, Neo4j
- › **Tools** Figma, Google Jamboard, AdobeXD, Notion, PowerBI
- › **Other** Agile Methodologies, RESTful Services, Material Design, Git, Helm

## RELEVANT COURSES

---

Web Technologies + Practicum • Research Methodologies • Software Engineering • Advanced Database Management Systems • Social Network Analytics • Introduction to Data Science • Natural Language Processing • Knowledge Management • Data Structures & Algorithms + Practicum • Principles of Programming Languages • Machine Learning • Object Oriented Modelling and Design • Cloud Computing • Compiler Design