


PRAMOD KOTIPALLI

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SUMMARY

Let's create cyborgs! / Huge advocate of Symbiotic Artificial Intelligence, user-centered design, and accessibility. / Interested in projects at the intersection of artificial intelligence, augmented reality, wearable computing, and cognitive science. / Highly-experienced with full-stack development, human-computer interaction research, UX+graphic+motion design, and startups.

EDUCATION

Stanford University

September 2019 - June 2021

Masters of Science Computer Science · 2021
Depths: Human-Computer Interaction + Artificial Intelligence

Georgia Institute of Technology

August 2015 - August 2019

Bachelors of Science Computer Science · 2019
GPA: 3.83/4.00 (Faculty Honors)
Coursework: Machine Learning, Data Structures, Algorithms, Assembly & C, Object-Oriented Programming

EXPERIENCE

Space Exploration Technologies Corp. (SpaceX)

Hawthorne, CA

Software Engineering Intern

September 2017 - December 2017

- Designed, implemented, tested software solutions · Worked closely with PMs and UX designers
- Automated supply chain processes in ERP: mitigated legal risk, increased business efficiency
- Engineered SQL Server + .NET/C# backend that exposed RESTful APIs to AngularJS front-end
- Saved 1,500+ hr/yr of manual data entry · Led projects now used by all 7,000 employees

Cisco Systems

San Jose, CA

Software Engineering Intern

May 2017 - August 2017

- Architected, researched, implemented test automation framework for Cisco's Cloud DVR services
- Developed load testing and analysis framework to generate HTTP traffic and collect relevant statistics
- Designed AngularJS front-end with Python RESTful API and ELK · Orchestrates Docker containers
- Saved 10+ hr/wk of manual and error-prone OS/network configuration · Increases engineer efficiency

School of Interactive Computing @ Georgia Institute of Technology

Atlanta, GA

Project Lead + Undergraduate Research Assistant

January 2018 - August 2019

- Developing and analyzing Augmented Reality applications for intelligent warehouse mgmt. systems
- Researching responsiveness to notifications on head-worn displays and wearable displays
- Developing Google Glass apps and Python APIs with Prof. Thad Starner, Contextual Computing Group

Undergraduate Research Assistant

January 2016 - December 2016

- Developed predictive health analytics for heart disease patients with Professor James Rehg, Wall Lab
- Used MATLAB and Python to apply DSP + HMMs to on-body sensors to identify concerning behavior

ATSDR @ Centers for Disease Control and Prevention (CDC)

Atlanta, GA

Technical Consultant

August 2018 - May 2019

- Researched user requirements, architected, and delivered automated air quality analysis pipeline
- Drastically reduced time for publishing reports on air quality, assisting CDC in its public health missions

School of Mechanical Engineering @ Georgia Institute of Technology

Atlanta, GA

Lead Software Engineer

January 2016 - May 2018

- Built service used by 2,500 students and judges in Georgia Tech's Capstone Design Expo.
- Integrated user feedback for highly-intuitive UX significantly reducing user onboarding.
- Collaborated through Git-centered workows with a tight feedback loop from advisers.
- Technologies used: Django, PostgreSQL, Git, jQuery, responsive HTML/CSS design.

AWARDS

Best Paper

Singapore

ACM International Symposium on Wearable Computers

October 2018

- Awarded for research work published to ACM International Symposium on Wearable Computers
- Studied novel wearable RFID-based verification system for the central process of order picking in logistics

Grand Prize winner

Emory University, Atlanta, GA

HackATL

November 2016

- Awarded for developing and presenting comprehensive business plan to Atlanta-area venture capitalists
- Developed wearable tech for on-demand community help in emergency situations on college campuses

Microsoft Prize

Emory University, Atlanta, GA

HackATL

November 2016

- Won 2nd place in Microsoft Prize category at HackATL, a tech startup hackathon at Emory University.
- Created hardware prototype for smart watches wearers to shake hands and connect online.

Grace Hopper Conference travel grant

Houston, TX

Google

October 2016

- 1 / 100 students awarded full scholarship to attend Grace Hopper Celebration of Women in Computing
- Developed skills based on demonstrated interest/experience in promoting the role of women in computing

Faculty Honors

Atlanta, GA

Office of the Registrar

2016-2018

- Awarded to students who earn a 4.0 GPA in a full-time academic semester
- Received in multiple semesters including Spring 2016, Summer 2016, Spring 2017, and Spring 2018

PUBLICATIONS

Notification perception with visual distraction on Google Glass and Smartwatches

in progress

August 2018 - present

We investigate how are notifications are perceived differently when presented on wrist-mounted displays (e.g. smartwatches) and head-worn displays (e.g. Google Glass). We formulate and execute a dual-task study paradigm pairing notification stimuli with a visual search distraction task developed by prior literature.

Augmented Reality Head Worn Display Positioning for Sparse Order-Picking

under review by ACM IMMUT

January 2018 - May 2019

The goal of the study is to determine the most efficient order picking display position in an environment that requires walking to travel between the pick shelves. We used the Magic Leap One, a binocular head worn display, to investigate four different positions in the visual field for a virtual order-picking display: center-center: -5° to 5° horizontally and -5° to 5° vertically, center-right: 10° to 20° horizontally and -5° to 5° vertically, bottom-center: -5° to 5° horizontally and -15° to -5° vertically, and bottom-right: 10° to 20° horizontally and -15° to -5° vertically. We found that bottom-right results insignificantly worse than or, at best, similar to other positions in terms of accuracy and users' overall preference, subjective accuracy, subjective speed, comfort, and learnability. Due to relative parity with center-center in terms of speed, accuracy, cognitive workload, and user preference, the center-right position provides the best-performing binocular display position for HWD manufacturers and warehouse order pickers while minimizing the risk of the cognitive capture observed in other studies using the center-center position.

RF-Pick: order picking using a HUD with wearable RFID verification

best paper @ ACM International Symposium on Wearable Computers

January 2018 - October 2019

Order picking accounts for 55% of the annual \$60 billion spent on warehouse operations in the United States. Reducing human-induced errors in the order fulfillment process can save warehouses and distributors significant costs. We investigate a RFID-based verification method wherein wearable RFID scanners, worn on the wrists, scan passive RFID tags mounted on an item's bin as the item is picked; this method is used in conjunction with a head-up display (HUD) to guide the user to the correct item. We compare this RFID verification method to pick-to-light with button verification, pick-to-paper with barcode verification, and pick-to-paper with no verification. We find that pick-to-HUD with RFID verification enables significantly faster picking, provides the lowest error rate, and provides the lowest task workload.

PROJECTS

UX + Graphic + Motion Design

personal explorations in animation, graphic design, and UX research

December 2018 - present

- Designed, animated, edited, and published over 40 short videos and 20 high-quality static renders
- Demonstrates improving skills in animation, modeling, video production, sound mixing, and vector art
- Continuing to gain mastery of MAXON's Cinema 4D and Adobe's Creative Cloud products
- Portfolio continues to grow with new original work uploaded every week: <https://www.instagram.com/p13i>.

Supplier Onboarding Automation

four month intern-led project at SpaceX headquarters (see Experience)

September 2017 - December 2017

Testing-as-a-Service (TaaS) for Cisco Cloud DVR

three month intern-led project at Cisco headquarters (see Experience)

May 2017 - August 2017

Remembrance Agent

Library to display contextually-relevant notes based on keyboard input

July 2019 - present

- Based on concept of a Remembrance Agent (RA) was first outlined by Rhodes and Starner in 1997
- Designed as system that automatically presents contextually-relevant notes, documents, and contacts
- Integrates with Google's Gmail, Drive, and Cloud Speech APIs through a Java Swing desktop GUI
- Logs keystrokes and ambient speech (through Google Cloud APIs) and searches offline cache

Glass Notes for Google Glass

Android, web, and terminal applications to augment memory in class

January 2019 - present

- Based on system designed by Thad Starner at MIT Media Lab in the late 1990s • redesigned for today
- Allows for offline note taking using Bluetooth keyboard • periodically syncs to GitHub Gists

Automated Air Quality Analysis Pipeline

Consulting for the Centers for Disease Control and Prevention (CDC)

August 2018 - May 2019

- Architected and developed desktop application to automate processing data from air quality sensors
- Worked closely with five other teammates to develop in an Agile method and produce demo videos

dARts

play darts in augmented reality

May 2018

- Designed interactive experience for collaborative darts game in augmented reality
- Used iOS frameworks like SceneKit to draw planes/objects into real-world with ARKit

MetroSync

a web app to help musicians rehearse together

May 2018

- Designed/implemented web app featuring metronome synced across devices aiding in musical practice
- Developed real-time Web Socket-based app · Shared information between AngularJS front-end, REST API

channel.js

Simple Javascript front-end for Django Channels apps

May 2017

- Research developed open-source JavaScript library to aid in development of Django real-time apps
- Followed best-practices and thorough documentation styles to aid with collaborative devs or users

RichCaptions

symbolic math captions for educational videos

September 2016

- Designed/implemented UX for captioning and viewing videos with LaTeX-rendered math captions
- Developed AngularJS front-end leveraging YouTube API · Exposed Django REST API + PostgreSQL

PROJECTS

Twitter Sentiment Analysis

Use self-labels and ML to understand language of depression

August 2016

- Created pipeline to gather tweets on two polar topics to understand users' sentiment towards them
- Useful to mental health professionals to identify long-term trends in user's mental health

Handshake

connecting people online through physical handshakes

October 2015

- Developed hardware prototype for smart watches wearers to shake hands and connect online.
- Won 2nd place in Microsoft Prize category at HackATL, a tech startup hackathon at Emory University

ACTIVITIES

<gt-webdev/>

January 2016 - December 2018

President, Officer, Technical Speaker

College of Computing

- Designed curriculum, lead weekly meetings, hosted one-on-one "office hours" for hundreds of students

SKILLS

PROGRAMMING LANGUAGES

Python, JavaScript / TypeScript, C#, Swift, Java, Kotlin, MATLAB, HTML5 / CSS3, Shell, C / C++

DEVELOPMENT FRAMEWORKS

.NET, iOS, Django + REST, Angular, Ionic, NodeJS, Android, Retrofit, Google Glass Development Kit (GDK)

PACKAGING & DEPLOYMENT

Vagrant, Docker, Heroku, Microsoft Azure, Digital Ocean, Gradle, NuGet

CONTINUOUS INTEGRATION

Git + Git Flow, Jenkins, Travis CI / CircleCI / Wercker

DATABASES

Microsoft SQL Server (T-SQL), PostgreSQL, Redis

MACHINE LEARNING

hmm-learn, Digital Signal Processing, MATLAB, scikit-learn

IDES & ENVIRONMENTS

PyCharm, Visual Studio + ReSharper, IntelliJ IDEA, Android Studio

GRAPHIC DESIGN & ANIMATION

Sketch (macOS), Adobe (Illustrator, After Effects, Premiere Pro, Photoshop, Audition, InDesign), MAXON Cinema 4D, Octane Render

HUMAN-COMPUTER INTERACTION

UX Research, UI Design, Study Design (counter-balancing, dual-task, learning effects, etc.), Interview Design, Data Visualization, Statistics

SOFTWARE ENGINEERING CONCEPTS

RESTful API Design, Containerization, Virtualization, Distributed System Design, Message Queues / Task Queues, Micro-Service Design