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

Georgia Institute of Technology *August 2015 - August 2019*
Bachelors of Science Computer Science · 2019
GPA: 3.91/4.00 (Faculty Honors)
Coursework: Machine Learning, Data Structures, Algorithms, Assembly & C, Object-Oriented Programming

EXPERIENCE

Space Exploration Technologies Corp. (SpaceX) *Hawethorne, 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 signicantly 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 IMWUT *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 *September 2017 - December 2017*

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

three month intern-led project at Cisco headquarters *May 2017 - August 2017*

Remembrance Agent

Library to display contextually-relevant notes based on keyboard input *July 2019 - present*

Glass Notes

Android, web, and terminal applications to augment memory in class *January 2019 - present*

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

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