




# Manila Devaraja

## Graduate Research Student | Kahlert School of Computing, University of Utah

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Ph.D. student seeking May 2024 research internship opportunities in Human-centered Interaction(HCI), particularly interested in working at the **intersection of humans(psychology), AI, and privacy.**

### EDUCATION

August 2023 May 2028*	<b>Doctor of Philosophy   Major - Computer Science, SALT LAKE CITY, Utah</b> Coursework : Human-Computer Interaction, Social Computing <span>Human-Centered Computing on Usable Privacy and Security</span>
August 2021 May 202	<b>Master of Science   GPA : 3.7/4.0 , SALT LAKE CITY, Utah</b> Coursework : Machine Learning, Deep Learning, Natural Language Processing, Theory of Machine Learning, Probabilistic Machine Learning, Data Wrangling <span>Data Analysis and Management</span>
May 2014 May 2018	<b>Bachelor of Engineering   CGPA - 9.35/10 , Mysore, India</b> Relevant Coursework : Data Structures & Algorithms, Artificial Intelligence, Computer Networking, Network Security <span>Computer Engineering</span>

### RESEARCH EXPERIENCE

May 2023 present	<b>Graduate Research Assistant   Kahlert School of Computing, SALT LAKE CITY, Utah</b> <ul style="list-style-type: none"><li>&gt; Investigate users understanding of the meaning of the permission settings on their smartphones</li><li>&gt; The survey includes ranking and rating a total of 24 permissions(Android and iOS combined) based on their importance to the user and inputting their understanding of 6 permission settings.</li><li>&gt; <b>A quantitative and qualitative study</b> will be conducted on the collected data</li></ul> <span>Statistical Data Analysis</span> <span>Survey Data Collection</span> <span>Qualitative Analysis</span>
May 2022 May 2023	<b>Research Assistant   David Eccles School of Business, SALT LAKE CITY, Utah</b> <ul style="list-style-type: none"><li>&gt; Built a <b>data analysis pipeline</b> by performing EDA on Amazon reviews using NLP techniques. Conducted a research study to understand the features to be extracted.</li><li>&gt; Using <b>statistical NLP methods and topic modeling</b> to understand the review features and <b>correlate to the review usefulness</b> to improve the marketing strategies and recommendations.</li><li>&gt; Evaluating brands' marketing communication with customers on Instagram by <b>scraping posts and comments.</b></li></ul> <span>Statistical Data Analysis</span> <span>NLP</span> <span>Latent Dirichlet allocation Modelling</span> <span>Instagram scraping</span> <span></span>

### INDUSTRY

August 2018 July 2021	<b>Software Product Developer   Robert Bosch Engineering and Business Solutions, BANGALORE, India</b> <ul style="list-style-type: none"><li>&gt; Lead SW Product Developer responsible for providing final Engine Control Unit(ECU) software to <i>Japan and Indian Clients.</i></li><li>&gt; Test automation using Python scripts : A time-consuming manual test-cases of OBD regression test was automated to <b>save 90% of the time.</b></li><li>&gt; Experience in all stages of <b>V-model SDLC</b> and all quality processes for the work product : <b>Analysis, Design, Coding, Integration, and Testing</b> of customer requirements.</li></ul> <span>SDLC</span> <span>AUTOSAR</span> <span>CAN</span> <span>ISO26262</span> <span>Diagnostics</span> <span>Software Product Developer</span>
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## TECHNICAL SKILLS

Programming	Python, C, C++, MATLAB, SQL
Packages/Tools	Scikit-learn, Pytorch, XGBoost, NumPy, Pandas, Matplotlib, Seaborn, BeautifulSoup, Git, Max-QDA(Qualitative Analysis), Qualtrics(Survey Building)
Research	Qualitative Analysis(Thematic Analysis), Quantitative Analysis, Statistics and Data Analysis(Python), Writing

## PROJECTS

### INTERTEMPORAL ANALYSIS USING SYMBOLIC REGRESSION

AUG 2022- MAY 2023

- > An **end-to-end Machine Learning project** to formulate an expression for discount rate by conducting **user studies**, collecting data, and evaluating symbolic regression models.
- > **IRB** certified to formulate and build a **Qualtrics survey** to *capture* features on discount rate behavior of humans.
- > Evaluation of the **deep symbolic regression models** to formulate an expression for discount rate.
- > **3D Visualisations of model's prediction** to group and correlate current amount, future amount, and time.

Survey Data Collection Regression Models 3D visualisation

### CS 6530 - ADVANCED DATABASE COURSE PROJECT

SEPT 2022 - DEC 2022

- > Research study to reduce the number of comparisons required during the merge operation. By integrating **binary search with interval-based distribution learning**
- > We implemented **piecewise linear regression, Qcut, and CKwrap models**.
- > We reduced the number of comparisons by **1.5 million** on the YCSB Zipfian dataset of 10 million points of two arrays.

Compaction Learning Database Project using Statistical Learning

### CS 6965 - SOCIAL COMPUTING COURSE PROJECT

AUG 2023 - PRESENT

- > Research study to understand the top concerns/discussions on **Reddit** about sharing children's data online.
- > Topic modeling using **LDA, Anchored CorEX, and BertTopic** and evaluation of the models by measuring **coherence and relevance** of the topic models

Social Computing Topic Modelling on Sharenting Reddit data

## TEACHING AND MENTORING

Aug 2021 Dec 2022	Teaching Assistant   CS2420- Data Structures and Algorithms using Java, UNIVERSITY OF UTAH, Utah <ul style="list-style-type: none"><li>&gt; Assisted 300+ students over the semester</li><li>&gt; Handled 50+ students grading each week</li><li>&gt; Conducted labs each week</li></ul>
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Java Data Structures and Algorithms Mentoring

## AWARDS

2023	Student Award to attend GREPSEC VI workshop
2015	Student Delegate at IEEE SYW Leadership Congress 2015

## OUTREACH AND VOLUNTEERING

2022	Student Volunteer, ICLR 2022
2018-2020	Active CSR volunteer, Robert BOSCH
2015	Teacher, Science Ashram

## REFERENCES

Sameer Patil  
Professor, KAHLERT SCHOOL OF COMPUTING  
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