Stephen Carvalho

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EDUCATION

Clemson University | MS in Computer Science | Concentration in Human-Centered Computing | GPA: 4.0/4.0   August 2019 to May 2021
Relevant Courses: Design & Analysis of Human-Computer Systems, Human-Computer Interaction, Fundamentals of Human-Centered Computing, Inclusive Design, Advanced Cognition in Psychology, Mobile Software Development

Mumbai University | B. Eng. in Information Technology | GPA: 7.62/10   August 2016 to May 2019
Relevant Courses: Usability Engineering, Web Programming, Advanced Internet Technologies, Computer Graphics and Virtual Reality, Software Engineering

EXPERIENCE

User Experience Researcher & Developer, Accessibility | Drive Lab, Clemson University   *December '19 – Present*
- Working at the "Design and Research of In-Vehicle Experiences Lab" (Drive Lab) to **define innovative interfaces** and experiences of highly autonomous vehicles in order to render them accessible by older adults and users with disabilities.
- Responsible for writing research papers, interviewing participants, brainstorming design solutions, **prototyping and coding design solutions**, attending and presenting at conferences, contextual inquiries, and developing new models to guide the design and research of accessible autonomous vehicles.

Software Engineering Intern | American Credit Acceptance, Spartanburg, SC   *June '20 – August '20*
- Developed reusable **infrastructure as code** in **.NET** using **AWS Cloud Development kits** to improve deployment time of multiple AWS services from multiple clicks on the AWS console to a single command on the AWS CLI that deploys infrastructure in seconds.
- **Automated CI/CD pipelines** using **DevOps** tools such as Atlassian Bamboo, Atlassian Bitbucket, SonarQube, AWS, Docker, JFrog, and scripts.
- Developed a **.NET MVC Core 3.1** web application using **Microsoft Graph API** for an application internal to the company that allowed managers to query the **Active Directory** to find out various information about users and groups within the company.

Front-End Developer | IIT-Bombay, Mumbai, India   *August '17 – October '17*
- Worked as a **UI/UX developer** to help research scholars pursuing their Ph.D. in Education develop Web applications for conducting research studies. Developed web applications to teach engineering students various topics not covered in college such as troubleshooting skills in Computer Networks and Exploratory thinking.

Full Stack Web Developer | Vision Mechatronics, Mumbai, India | vmechatronics.com   *June '16 – August '16*
- Developed a solar plant cost estimator that reduced the quote report generation time by 63% by automating the entire process by leveraging **PHP, SQL, HTML5 & CSS, Bootstrap,** and **Latex**.
- Designed & Developed the company website **UI and UX** from scratch while boosting the page rank of the website to appear at position 1 on search result pages by successfully implementing **SEO** best practices.

PROJECTS

Studying the phenomenon of understanding how users perceive and are influenced by recommendations in online shopping
- The core objective is to investigate how users perceive and act based on recommendations in an online shopping environment and form a theory based on research that is grounded in data. The research is a qualitative study conducted using Grounded Theory practice that involves iterative data collection and analysis through interviews and contextual inquiry, forming analytical codes and categories from data, constant comparison of the analysis at each stage, memo-writing, sampling, conducting literature review and advancing the theory development after each stage.

Trips & Falls
- The overall goal is to develop a technology-based intervention that could be used by older adults to evaluate their own homes for safety risks within the context of their own functional and mobility needs and to identify resources in their community to support home modifications and aging in place.
- The project follows a product development cycle that involves forming a mission statement, interviewing key stakeholders, identify customer needs, performing competitive analysis, forming a product specification, developing a product prototype, testing and refinement of the product and delivering the product to the customer.

RideEasy, Accessible ridesharing ecosystem

- RideEasy was developed as a ecosystem of technologies to create an inclusive autonomous ridesharing vehicle service. The ecosystem included prototypes of the ridesharing mobile application and website, in-vehicle HMI, and the external HMI. This ecosystem was developed through research that involved interviewing older adults and users with vary disabilities, conducting a competitive analysis, literature review, persona creation, and followed by qualitative data analysis to guide the design of prototypes, that were evaluated by the participants post design and refined based on feedback.

CO_2UT!, Reduce carbon footprint

- CO2ut! is a mobile application for users to keep track of their carbon footprint. The app seeks to keep people aware of the amount of Carbon produced by their daily activities and help them reduce it by providing relevant suggestions and options.
- **Methods:** Wireframing, Prototyping, User Research, Requirements Gathering, User Evaluation, Heuristic Evaluation, Android Application Development

LEADERSHIP

Marketing head at CRCE Formula Racing | Formula Student Racecar |

- Involved in the Design and Manufacturing of a Formula prototype racecar based on a set of rules where I worked as part of the Marketing and Composite Team, and managed all the non-technical work such as Website development, Video Production, Social Media, Business Presentations and Organizing Team events.
- Led the 8 member marketing team in establishing Corporate Relationships and organizing crowdfunding campaigns to garner sponsorship worth ₹9,00,000 ($12,700).
- Built an online presence for the team by creating and managing all social media accounts, designing and developing the team's website and registering the team on Google Places.
- Co-created and presented the Business plan at Formula Bharat (2019 & 2018) and Supra SAE 2017.

SKILLS

Research
Usability Testing, User Interviews, Affinity Mapping, Persona Development, Competitive Analysis, Quantitative and Qualitative Analysis, User Enactment, Contextual Inquiry, Heuristic Evaluation, Focus groups

Design
Figma, Adobe XD, Axure, Balsamic, HTML & CSS, Miro, Bootstrap, MaterializeCSS, Canva, Web Design, Interaction Design

Tools & Languages
Java, C#, JavaScript, XML, SQL, PHP, C, C++, AWS Cloud, Jira, Bamboo, Bitbucket, Git/GitHub, .NET, NUnit Testing,

PUBLICATIONS

- Carvalho, S., Ahire, S., Huff, E., Brinkley, J. (2020). UTT: A Conceptual Model to Guide the Universal Design of Autonomous Vehicles. Proceedings of the Human Factors and Ergonomics Society Annual Meeting [To Appear]

CONFERENCES

- Presented at Human Factors and ergonomics society 64th International Annual Meeting
- Attended 12th International ACM Conference on Automotive User Interfaces and Interactive Vehicular Applications

AFFILIATIONS

- Association for Computing Machinery (ACM)
- Human Factors and ergonomics society (HFES)
- Society of Automotive Engineers (SAE)

AWARDS

1st/40, 'UNSCRIPT 2019' Hackathon at Mumbai University
Employee of the Month (All round excellence) at Vision Mechatronics