KAARTHIK A. ALAGAPPAN

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EDUCATION

University of Central Florida   Orlando, FL
Bachelor of Computer Science,   *December 2020*
GPA: 3.96

Seminole State College   Sanford, FL
Associate of Arts (through dual enrollment),   *August 2017*
GPA: 4.0

TECHNICAL SKILLS

Languages: C, Java, Python, SQL, Bash, JavaScript, HTML, CSS, PHP

Tools and Environments: Linux, Git, MySQL, Agile

Certifications: Microsoft Office Specialist (2014), Microsoft Technology Associate (2014)
Adobe Photoshop (2015), Illustrator (2015), Premiere Pro (2015), Dreamweaver (2015)

WORK EXPERIENCE

University of Central Florida   *May 2019 – Present*
Undergraduate Research Assistant
- Modified the LLVM and Clang infrastructures and a source code transformer to support a customized, side-channel free architecture, and created Bash scripts to test the tools and simplify the process for the end users
  - Added a new LLVM-IR (C++) branch opcode that produces extra assembly code used by the side-channel free architecture, and modified Clang (C++) to emit that opcode based on the source code attributes
  - Customized a Java-based source code transformer to convert specific statements into a compatible format that does not induce new side-channels

PROJECTS AND EXTRACURRICULARS

Endless Learner (ELLE) – Virtual Reality   *January – December 2020*
Senior Design Project
- Working with a researcher to create virtual reality games that aid students in learning new languages while collecting data from the games to analyze the impact of different games on the students' growth
- Serving as the project manager for a team of 5 and as a backend developer
  - Collaborated with two other ELLE groups to determine the requirements and redesign the existing system to better suit the researcher's needs and to have a unified backend, and coordinated the new backend implementation
  - Currently implementing RESTful APIs in Python using Flask and maintaining MySQL databases

Engineering Leadership & Innovation Institute at UCF   *November 2018 – Present*
Member in the student committee
- Working with the tech team to create projects that are to be used as tools to teach children about programming
- Two games, tic-tac-toe and minesweeper, have been completed using Python, and two projects, an IoT project to control a regular 3D printer through the internet and a Python starter guide, are in progress

Knight In & Contact Manager   *August – December 2019*
Course Projects
- Served as the project manager and as a backend developer for both projects
- Built a contact manager website based on the LAMP stack with HTML5, CSS, JavaScript, and REST APIs
- Collaborated with a professor to create a Bluetooth based attendance app called Knight In
  - Familiarized myself with Firebase and JavaScript to host the database and create API functions, respectively

LEAD Scholars (UCF)   *August 2017 – May 2019*
- A two-year leadership program that helped me cultivate effective leadership practices

VOLUNTEER SERVICES

Hindu Society of Central Florida
- Creating an automated phone and text messaging system in Python using Twilio services
- Recreated and improved their website in addition to uniting different services under a new management system