TIKAHARI KHANAL

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EDUCATION

University of Florida **Gainesville, FL**
Bachelor of Science, Computer Science *August 2016 to Spring 2020*
- GPA: 3.99, Summa Cum Laude
- Deans List: Fall 2016 - Spring 2020

Previous Courses Programming 1, Programming 2, Data Structures, Operating Systems, Databases, Software Engineering, Blockchain Technology and Applications, Data Science in Bioinformatics

EXPERIENCE

Brain Research Rehabilitation Center **Veteran's Affairs Hospital, Gainesville**
Biomedical Engineer/Research Health Science Specialist *May 2020 to present*
- Designed, developed, and implemented a convoultional neural network to outline human pancreas in a stack of MRI body scans greatly improving the reliability and expense of the previously manual process
- Developed, maintained, and tailored data science workflows and machine learning approaches to numerous projects in fields ranging from neuroimaging to computational modeling using state-of-the-art DGX A100 hardware through the University of Florida's supercomputer, HiPerGator

McKnight Brain Institute **University of Florida Department of Psychiatry**
Research Assistant *February 2019 - May 2020*
- Developed a computational model of the endocrine cells of the pancreas to simulate electrophysiological and hormonal activity in the attempt to better understand and treat diabetes, metabolic syndrome, and obesity
- Worked heavily with C++ and python data science libraries within a high performance computing environment to capture ion channel dynamics, diffusion, and molecular signaling
- Implemented an evolutionary algorithm to parameterize the model according to experimental data and biological context within parallelized workflow characterized by periodic access to different hardware and software resources

McDaniel Lab **University of Florida Department of Biology**
Research Assistant *February 2019 - May 2020*
- Identified and analyzed chromosomal inversions, SNPs, and other polymorphism of the moss species Ceratodon Purpureus through a novel pipeline, perl and R within an HPC featuring heavy use of gdb and regex command line tools
- Developed a pipeline for image processing that automated data collection for over 3000 images and saved the lab >1000 hours using Jython and imageJ

PROJECTS

Neurosurgery Patient Education Application **University of Florida College of Medicine**
Team Lead, Developer *December 2019 to Present*
- Lead a team of three in the development of an iOS application and accompanying workflow that would allow users to control the processing, visualization, and storage of MRI and CT (DICOM) scan data under the supervision and on the behalf of the UF College of Medicine and UF Department of Neurosurgery
- Organized a workflow for the structural segmentation of DICOM data using industry standard libaries (FreeSurfer, nibabel, numpy, etc.) in python and C++ within an AWS E2 instance
- Developed RESTful APIs within a Django web application to dispatch the processing of scans and facilitate the communication between servers and clients during logins, access to data, and updates during various points within the workflow

FACER Lock **Facer Lock Company**
Team Lead, Developer *August 2019 to December 2019*
- Lead of team of four in the development of a React.js deployed on Heroku for a Gainesville-based start-up looking to improve marketing and better track inventory
- Responsible for the backend (models, views, controllers), payment processing, the navigation bar, and routing

PUBLICATIONS

- "*Partially Resolved Sexual Antagonism in the Production of Microarthropod-attracting Scents in Ceratodon purpureus*", Proceedings of the Royal Society B

OTHER SKILLS

Languages C#, C++, CSS, HTML, Java, Javascript, Python, R, SQL
Libraries/Frameworks Angular.js, AWS, Docker, Dotnet, ImageJ, React.js