LUCAS SAECHAO
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EDUCATION

California State University, Sacramento **August 2016 - May 2021**
Bachelors of Science in Computer Science
- *Certificate in Game Engineering*
- *Dean's List Fall 2020*

RELEVANT COURSEWORK

- Advanced Computer Graphics (OpenGL, AR, VR)
- Cloud and Mobile Computing Pragmatics (AWS, .NET)
- Database Management Systems (MySQL, Postgres)
- Computer Game Architecture and Implementation
- Intelligent Systems (Jupyter, ML, TensorFlow, Keras)
- 3D Computer Modeling (Maya 3D, Blender)
- Data Structures and Algorithm Analysis
- Software Engineering (Agile/Scrum SDLC, Jira)
- Computer Architecture and Organization
- Computer Networks and Internet (REST API)

TECHNICAL SKILLS SUMMARY

Languages: Java (5 years), C++, C#, C, Python 3, Swift, PHP 7.3, JavaScript, SQL, HTML, CSS, GraphQL
Database Management: MySQL, PostgreSQL, MongoDB
Tools: Github, Docker, Jira, Trello, Eclipse, Atom, PHP Storm, Xdebug, VS Code, Xcode, Apache Server, Jupyter Notebook
Other Technologies and Frameworks: Unity, Unreal Engine, OpenGL, Virtual Reality, XR, Drupal, Vue.js, Google Cloud Platform, AWS, .NET, REST API, Adobe Photoshop, Maya 3D, Blender, Anaconda, TensorFlow, Keras, Scikit-Learn

WORK EXPERIENCE

Junior Drupal 8 Web Developer **May 2020 - October 2020**
Divic LLC - Sacramento, CA
- Developed and implemented fast and responsive website functionality for various teams and contracts such as Scotts Lawn Care, Sony Pictures Entertainment and California Law Enforcement Website, answering tickets on Jira and Trello.
- Implemented website functionality such as dynamic webform migration, infinite page scrolling, multiple windows targeting, lazy form validation and variable size product promo cards taking advantage of Drupal 8, using Javascript/ jQuery, and the PHP Symfony framework.

PROJECTS

Machine Learning CIFAR-10 Image Classification Models (https://github.com/saechaol/cifar) **April 2021**
- Built two computer vision models to predict a series of images from the CIFAR-10 dataset, the first model trained directly using CIFAR-10, and the second utilizing transfer learning based off of the VGG16 model trained from ImageNet.
- Feature extraction is performed using a convolutional neural network (CNN) architecture, with 10 possible outputs.
- The CNN is comprised of multiple hidden layers with a 3x3 convolution kernel with strides 1 and 2, using relu activation, several 2x2 max pooling layers, dropout layers, and compiled with categorical crossentropy and the adam optimizer.
- The CIFAR-10 based model achieves a 76% accuracy rate, outperforming the transfer learning VGG16-based model, which achieved a 71% accuracy rate.

VRcade - HackReality Entertainment Prize Winner (https://devpost.com/software/vrcade-6fn5vt) **March 2021**
- Winner of 3rd place prize for "Best use of AR/VR for Entertainment/Games" at the hackathon, HackReality.
- The project is made with Unity, with Unity Collab as a version control system, and the game's logic is primarily developed in C#, using the Oculus Integration Package and Microsoft's Mixed Reality Tool Kit (MRTK).
- The game provides several VR experiences, such as Billiards, Air Hockey, Table Tennis, and supports real-world object placement. The user can scan a real-world table and bring it into the virtual world for use in anchoring themselves in gameplay. The table is fully tracked in virtual space using Oculus VR, improving realism of the experience by 100%.
- The table is tracked in 3D space using calibration points set by the player, and the game is adjusted to match its height.

Mobile Learning Application Using AWS EC2 (https://github.com/saechaol/learning-app) **September 2020 - December 2020**
- Implemented an Android app that interfaces with a .NET web service developed with C++ with an available REST API endpoint, hosted on a T2 micro EC2 instance, with an RDS database backend. The frontend directly interacts with the web service using the implemented API controllers.
- The application allows for user registration for three distinct roles (admins, instructors, students), student enrollment, task assignment, scheduling and course viewing through the RESTful web API, as well as supports transaction processing, SSL encryption, and AWS load balancing.