

LUCAS SAECHAO

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EDUCATION

California State University, Sacramento
Bachelors of Science in Computer Science
• Dean's List Fall 2020

August 2016 - May 2021

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)
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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
Divic LLC - Sacramento, CA

May 2020 - October 2020

- 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 element updating, 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.
 - Implemented a webform migrator tool that would automate the migration of webform content and database submissions from Drupal 7 to Drupal 8 websites
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PROJECTS

Senior Capstone Project — Virtual Reality Driving Simulator (<https://pastachefs.github.io/trafficsim>) **September 2020 - May 2021**

- As project lead, lead an 8-person team in the development of a virtual reality simulator designed to model driver behavior, reducing research costs from over \$100,000 per unit to ~\$2,500 per research unit.
- The application is built in Unreal 4.23, with many modules programmed in C++, for use with an Oculus Rift with a LeapMotion IR finger tracking controller.
- The application supports level creation, driving simulation, NPC driver behavior, collision and interaction, scenario creation, user driving information logging (gas pedal position, acceleration, brake time, steering input), real-time traffic simulator, and "autonomous" driving simulation mode.

Machine Learning Network Intrusion Detector (<https://github.com/saechaol/network-intrusion-detector>) **March 2021**

- Built a binary classification machine learning model trained using TensorFlow and Keras, providing two different training models: a dense neural network, and a convolutional neural network model, trained using the KD Cup 1999 dataset.
- Accurately predicts the difference between a well-intentioned and a malicious network connection with 99.5% accuracy, producing a perfect ROC curve of 1.0.
- The convolutional neural network uses two hidden convolutional layers, a max pooling layer, a dropout layer, followed by a dense layer, each with a relu activation function, compiled with categorical crossentropy and the adam optimizer.

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.