Greg Pritchard

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Graduate of Sam Houston State University's Physics and Mathematics program. Self taught programmer looking to start a rewarding career using my skills.

EDUCATION

Sam Houston State University

August 2012 - May 2016

Bachelor of Science in Physics and Mathematics

Research lab experience. Electronics and Circuit Analysis.

EXPERIENCE

Sam Houston State University Academic Success Center

August 2015 - May 2016

Physics/Math Tutor

Guided university students in understanding difficult topics in physics and mathematics. Used new technologies to provide near 24/7 help to students that needed it.

Sam Houston State University Physics Department

August 2012 - May 2015

Lab Instructor

Taught multiple physics labs for science and non-science majors. Underwent a project with other physics TAs to overhaul the lab projects and manuals.

PROJECTS

timednotes

https://github.com/gregoryneal/timednotes

Tech: C#, .Net, WPF, Windows, Visual Studio

A small .wpf application written in C# for windows. It's responsible for keeping track of short notes you need to jot down during the day. Uses a FileSystemWatcher to keep track of files (notebooks) in a specific folder on your computer, then uses two way data binding to bind the list to a selectable list view, from which you can open the notebook for editing. Once selected, the app parses the notebook from the file and binds the data to another list, which allows for note selection and editing. I have plans to refactor the project to store the data in a database, which would allow me to build a secondary mobile application to go with it and explore the complexities of full stack .net development.

RRT Road network generator

https://github.com/gregoryneal/Cigen

Tech: C#, Unity, Visual Studio, Game development, simulation

Built a road network generator in Unity using C#. The simulation uses the Rapidly Exploring Random Tree algorithm to generate a list of points to be designated intersections. Each intersection is connected to other intersections, and then their locations are used to build vertices in 3D space that make up the road mesh. Each road and intersection are triangulated individually and then stitched together to build the road network. The project includes settings to change anything from the thickness of the roads, to the actual metric space the roads occupy: Euclidean (roads can face any direction), Manhattan (roads are horizontal or vertical), or Grid (same as Manhattan but length constrained).

Optical Character Recognition Bot

https://github.com/gregoryneal/ocrbot

Tech: Python, SQLite, Visual Studio, Image processing, Text recognition, Tesseract

A bot designed to scrape images off of the social media site Reddit and perform character recognition. Once text is found it is passed through a series of filters to reformat it and then automatically posts it as a comment. Most images aren't automatically ready for OCR, this problem is approached by processing the image multiple times. Each run the image is passed through a set of filters, then OCR is attempted and the result is gathered in an array, the best text is then selected via a configurable selection function. The program uses a few different packages, the main one being pytesseract, a python wrapper for Google's Tesseract OCR program, which does the heavy lifting. There is also the widely adopted pillow package, for the image preprocessing. Validation data and processed post ids are stored in an sqlite3 database.

SKILLS

.NET, python, C#, SQL, C++, java, Visual Studio, Game development,