Joseph Ranieri

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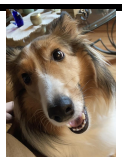
For whoever reads this



Skills

Languages:

- Spanish and English

Coding Languages:

- JavaScript, Python, C/C++, Scala, HTML, CSS

Experience & Academic Projects

UB Recreation / Referee

2022 - PRESENT, BUFFALO NY

- Worked as an assistant and then as a **head** referee
- Introduced VAR to prevent erroneous decisions
- Managed both recreational and competitive divisions for indoor and outdoor soccer

Image Classifier

- Goal was to create a model to identify whether a given image contained a dog, a food or a vehicle
- Implemented a CNN (AlexNet) in order to accomplish this with an accuracy of 85%
- Added batch normalization after all convolutional layers to increase accuracy by 15%
- Changed the models optimizer from SGD to Adam improving accuracy by 3%
- Trained model with a dataset containing 15,000 images divided equally among the three categories of items

Pintos Operating System

- Worked in group of three to design and implement the functionality of the Pintos OS
- Developed lazy loading where a page was only loaded into a frame when it was first needed (when page fault occurred on a page within the page table)
- Implemented stack growth such that when there is a page fault for a page not within the page table a page is created, added to the stack if possible and mapped to a frame
- Included thread synchronization with semaphores allowing a thread to prevent another thread from accessing its critical section until the original thread exits
- Created system calls by invoking an interrupt and pushing all arguments with the syscall number to the stack and then passing the stack pointer to the syscall handler

Education

SUNY University at Buffalo / Bachelor's in Computer Science

2020 -PRESENT, BUFFALO NY

Relevant Courses:

- **CSE250**(Data Structures)
  - Binary Trees, HashMaps, BST, Graphs, Linked Lists
- **CSE331**(Algorithms & Complexity)
  - Dijkstra's Algo, Asymptotic Notation, Greedy Algos
- **CSE421**(Operating Systems)
  - Concurrency, Virtual Memory Management, Scheduling
- **CSE474**(Machine Learning)
  - CNNs, Unsupervised Learning, Reinforcement Learning

Personal Projects

- https://justjoe6.github.io