New London, CT
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NIKESH GHIMIRE

LinkedIn/nikcache
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Education

Bachelor of Arts in Computer Science, Connecticut College, Cumulative GPA: 3.96/4.00 **Aug 2018 — Expected May 2022**
With Minor in Psychology
Honors: Dean's High Honors (Fall 2018, Fall 2019 - Spring 2021), Dean's Honors (Spring 2019)
Awards: Junior Computer Science Award, Science Leader

Programming Languages	Python, MATLAB, Java, JavaScript, Kotlin, C#, SQL
Tools & Frameworks	Keras, PyTorch, Machine/Deep Learning, Video Production and Graphics, Graphic Design, MERN Stack, Unity, Git, VS Code, Adobe CC, LaTeX, Blender
Relevant Coursework	Data Structures, Algorithms, Computer Vision, Digital Signal Processing, Algorithmic Game Theory, Object-oriented Software Design, Computer Organization, Robotics, Artificial and Computational Intelligence, Entertainment Software Design, Computer Networks

Experience

ML Research Engineer **Jan 2020 — Present**
Computer Science Department, Connecticut College New London, CT

- Developed a machine learning model, on MATLAB, capable of instrument recognition via musician posture data.
- Trained a deep learning model, on Keras, to classify bowing movement of musicians playing the violin, viola, cello and more.
- Built and trained instrument specific deep learning models, Long Short-term Memory (LSTM) on PyTorch, to detect musical onsets.
- Experimented with video/audio data from 3+ datasets, helping generalize model over wider data ranges.
- Improved overall accuracy of multi-instrument onset detection model by 7% by refining pre-processing of data.
- Built multi-dataset compatible API-like framework for data extraction from 1500+ video and audio files.

Head Teaching Assistant **Aug 2019 — Present**
Computer Science Department, Connecticut College New London, CT

- Promoted to Head Teaching Assistant in May 2021.
- Led, organized and delegated 30+ Teaching Assistants (TA) for 22+ classes.
- Built and introduced an automated grading platform to the department, via python and SQL, for TAs to grade 600+ assignments.
- Built custom databases on Notion for efficient scheduling and easy hand-off to succeeding Head TA.
- Collaborated with 3 other departments on campus to maintain the department's reputation with the community.
- Tutored 600+ students over 20+ classes throughout 3 years.
- Graded 400+ assignments over 5 classes, including Algorithms & Data Structures.

Co-founder, App Development Lead, Graphic Designer **Jan 2020 — Present**
Pristhaboard, Educational Reform Firm Kathmandu, Nepal

- Designed logo, UI Toolkit, 10+ social media posts and brand image consistent to the vision statement of our company.
- Solicited scope of educational reform from 4 NGOs to develop an academically engaging software.
- Programmed prototype of software package with the MERN stack, python and Adobe Creative Cloud.
- Experimented building unit tests, with Mocha, to extensively test platform prototype.

Projects

Football Transfer Market Simulator **Mar 2019**

- Built python application to simulate realistic transfer market of 18,000+ football stars around the world.
- Implemented algorithmic strategies to efficiently process through 1,800,000+ values of database for a runtime of <3s.
- Constructed simple User Interface to allow users to participate in auction simulations (inspired by greedy algorithms from course).

Local Interaction Model Simulator **May 2019**

- Collaborated with 2 peers to develop a python application to simulate Local Interaction Models (Eshel et al., 1998).
- Traversed over 4,000+ nodes and 16,000+ links with efficient algorithms to minimize runtime <10s/10 units of time.
- Incorporated inputs for custom weights and parameters within the models to study variability of results w.r.t. parameters.

xPilot Neural Network (NN) Controller **Oct 2019**

- Built a Queue Genetic Algorithm (QGA) to prepare 3 separate intelligence metrics toggled via a NN.
- Collaborated with 2 peers to develop 100+ fundamental rules to be followed by the NN controller.
- Developed framework to run 25+ simulations in parallel with bash commands to decrease runtime of algorithm by 2500%.

Scientific Photography Logger **Jun 2019**

- Developed logging program, via python, to keep records of astronomical pictures taken over a period of 4 years.
- Integrated program to work with MaxIm DL scripts to automate light data normalization process.
- Developed and shared GUI program to Astronomy departments at other universities.