Andrew Furey

+353 85-872-8886 | Dublin, Ireland | andrewfurey2003@gmail.com | github.com/andrewfurey21

Education

Trinity College Dublin Dublin, Ireland

Bachelor's of Arts, Computer Science *Aug 2021 — May 2025*

- Relevant Coursework: Data Structures, Microprocessors, Computer Architecture, Linear Algebra, Discrete Mathematics, Calculus, Concurrent Systems, Compiler Design, Computer Vision

Work Experience

Core Contributor, Software Engineer May 2024 — Present

mlpack *Remote*

- Selected for Google Summer Of Code 2024 to implement object detection models in C++ for use in embedded systems.
- Revamped the neural network code in mlpack so that more complex neural networks could be implemented with the library, such as BERT and YOLOv3.
- Wrote extensive tests using the Catch2 testing suite.
- Used the Cereal serialization library so that users could serialize and deserialize networks and their weights for later use.

Software Engineer Intern May 2023 — Aug 2023

Kirby Group *Dublin, Ireland*

- Wrote C# scripts for crawling and gathering documents on the company's servers for a "Lessons Learned" platform.
- Wrote a chatbot frontend similar to OpenAI's chat interface using C# and Blazor for a company wide chat bot.

Software Engineer, Path Planning Team Lead Sep 2021 — Aug 2022

Formula Trinity AI *Dublin, Ireland*

- Team Member for Trinity's Formula Student AI Team, where I developed path planning methods such as A* and RRT* to allow a FSAI autonomous vehicle to navigate around a track.
- As Path Planning Lead, I managed 2 other engineers to get a fully functioning path planning solution in Python and helped integrate our solution with other teams such as the Vision and Control teams.

Projects

newmind github.com/andrewfurey21/newmind

- Designed and implemented a deep learning library based on PyTorch and Tensorflow for educational purposes.
- Developed extensive testing using the GoogleTest library.
- Wrote CUDA kernels to accelerate training and inference on GPUs.
- Wrote an example program to train a convolutional neural network on the CIFAR-10 dataset to demonstrate the library's ability to train neural networks.

yolov3-tiny fintuning in pytorch github.com/andrewfurey21/yolov3-tiny

- Wrote pretraining, finetuning and inference code for the YOLOv3-tiny model using Python and Pytorch.
- Developed a Weights & Biases interface and logged metrics like loss, top 1 and top 5 accuracy to monitor the model during pretraining.

simple http server github.com/andrewfurey21/shs

- Implemented a basic HTTP server written in C on Linux.
- Used Wireshark to debug packets being sent to the client and Valgrind to solve memory issues server side.

Skills

- **Programming Languages**: C/C++, Python, C#, x86/ARM assembly, HTML/CSS, JavaScript, Java, Bash
- **Technologies**: git, valgrind, gdb, GoogleTest, Catch2, Pytorch, NumPy, Wireshark