Alessandro Farace di Villaforesta

King's College, Cambridge, CB2 1ST, England
+44 7717 858 719 af695@cam.ac.uk **A-F-V**
USA & Italian Passports / British Resident

SKILLS

- Proficient in **C#, Python, C, C++, Java, Javascript, OCaml, Prolog, git**.
- **Machine Learning**, with experience in **PyTorch, PyTorch Geometric, Sklearn, Numpy, Pandas**.
- **Blockchain** development with **Solidity** and **Ethers.js**.
- **Web** development with **React, Next.js, HTML, CSS, Bulma**.

EDUCATION

University of Cambridge, 3rd Year Computer Science **2019-2023**

- **King's Scholar** for receiving a **1st** in second-year exams (ranked in **top 10% of year**).
- **Student Rep** (2020-2021).
- Part of the inaugural cohort of the **King's Entrepreneurship Lab**.

Courses taken include:

- **APPLIED:** · Artificial Intelligence · Machine Learning · Quantum Computing · Cryptography · Security · Bioinformatics · Formal Models of Language · Data Science · Databases · Computer Graphics · Human-Computer Interaction.
- **THEORY:** · Category Theory · Algorithms & Data Structures · Type Theory · Information Theory · Complexity Theory · Computation Theory · Logic & Proof · Semantics of Programming Languages · Compiler Construction.
- **SYSTEMS:** · Cloud Computing · Networking · Computer Architecture · Concurrent & Distributed Systems · Operating Systems · Digital Electronics.

St Paul's School / Colet Court, Barnes, London **2008-2019**

- A* in Mathematics, Further Mathematics and Computer Science and D1 in Physics A-Level.
- 11 A* at GCSE.
- Senior Scholar.
- Senior Prizes for Computer Science and Further Mathematics.

PROJECTS & EXPERIENCE

Explainable AI for Cancer Diagnosis **September 2021–Present**

Developed an automated cancer diagnosis program that makes predictions on H&E histological images. Implemented HoVerNet to generate cell graphs. Trained CNN to predict cancer on each cell. Used Graph Neural Network to create voting classifier to better aggregate all predictions.

SS&C Technologies Holdings, Inc, London **Summer 2018**

Created a service to detect bank fraud using machine learning. Unsupervised learning trained on over 5 million transactions. Interacts through a REST API.

IoT Glucose Monitoring Group Project **January-March 2021**

Worked in a group with other students to create an end-to-end glucose monitoring system. IoT device, powered by Azure Sphere, relayed glucose data to a backend,

and then displayed it on a user-friendly webpage; this allowed both doctors and users to see the medical data.

Dog Breed Classifier **Lockdown 2020**
Developed a dog breed classifier in Pytorch using a CNN Resnet, with 85% accuracy on the Stanford dog dataset. Implemented concepts from academic papers, such as one-cycle learning.

ACHIEVEMENTS

Winner UK Young Enterprise Final 2018 & JA Europe Company of the Year
SureLight, Marketing Director
A ten-month competition against over 10,000 participants, hurdled regional and national competitions and went on to win European first place. Managed a team of five to market a brake light for bicycles. Learned the value of collaboration, leadership, and clear communication to improve efficiency and output.