NICCOLÒ FORTE

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Male • Italy • 8 November 2001 – Rome, Italy • 5 Clave St., Flat 9 Baltic Court, E1W 3AL, London, England, United Kingdom.

PROFILE

Son to an Italian diplomat, hence growing up in international cities including Washington DC, Jerusalem, Rome, Brussels, and now living and pursuing my career in London, I have cultivated an open mindset and a relentless sense of curiosity from a young age. Currently I am pursuing a PhD in aerospace engineering at Queen Mary University of London, from which I previously hold a first-class bachelor's degree (with honours) in mechanical engineering. Throughout my prior work towards my bachelor's dissertation thesis, I developed a highly accurate Python-based machine learning algorithm for predicting the experimental aerodynamic coefficients of aerofoils. Presently, my Ph.D. research focuses on pioneering novel manufacturing pathways for ultralightweight lattice metamaterials used in aerospace structures by leveraging computational and data-driven methods such as physics-informed machine learning and graph-based tokenization, employing engineering software like Abaqus and ANSYS, and programming languages including Python and MATLAB. I am dedicated to applying my diverse background and academic experience towards advancements in the fields of engineering and data science while remaining committed to continuously enhancing my knowledge and expertise through new experiences.

WORK EXPERIENCE

TEACHING ASSISTANT — *Jan 2024 – Present*

QUEEN MARY UNIVERSITY OF LONDON *– London, UK (Part-time, on-site)*

Teaching assistant providing support to professors and lecturers towards facilitating student comprehension and engagement in various engineering undergraduate and post-graduate level courses.

- **Presentation & Engagement** while delivering course content and aiding student comprehension of complex subjects.
- **Precision, Creativity, Expression & Clarity** when creating and delivering core course content for cohorts of students.
- Primary contributor towards distribution of $10,000 ANSYS grant towards curriculum and assessment redesign aimed at CAE simulation courses, introducing authentic and engaging assessments while satisfying industrial and employability skills.
- Supported Modules: Fluid Mechanics & CFD, Solid Mechanics & FEA, Flight Dynamics, Thermodynamics, Computational and Mathematical Modelling, Simulation Tools in Engineering, Advanced Mechanical Modelling of Materials, Experimental Design and Practice, Engineering Management, Business Strategy & Financial Accounting, and more.

DATA SCIENCE INTERN — *Jun 2022 – Aug 2022*

RED BULL *– Salzburg, Austria (Full-time, On-site)*

Member of Red Bull's Commercial Data Science team charged with computer science projects including creating financial estimates for markets of interest; evaluating the relevance and potential of global e-commerce markets; analysis of internal and external data to measure and infer quantities of interest, defining accountability.

- **Analytics & Optimization** of corporate data and trends through computational methods.
- **Research, Collaboration, & Timeliness** between team members to achieve project deadlines and objectives.

IT & WEB DEVELOPER — *Jan 2021 – June 2022*

DANTE ALIGHIERI PROJECT FOUNDATION *– Rome, Italy (Contract, Remote)*

Co-ordinate and collaborate within a team towards the full development of the Dante Alighieri Project non-profit foundation's website, social media pages, and marketing strategies.

- **Management & Decision-Making** while executing projects within a team, including an NFT Digital Art Collection.
- **Research, Communication, & Collaboration** between team of colleagues to produce and deliver content.
- **Web Development, Marketing, & SEO** while building the website and employing social media marketing strategies.

SOFTWARE UI/UX TESTER — *Oct 2020 – Present*

FREELANCE *– London, UK (Freelance, Remote)*

Prototype web and app software testing and feedback for companies such as Meta, Hyundai, SumUp, and more through freelance platforms, including Dscout, Methinks, Appen, UserTesting, Testing Time, and more.

- **Confidentiality** with sensitive prototype information by signed non-disclosure agreements (NDAs).
- **Adaptability & Compliance** while executing tasks and submitting feedback following an explicit procedure.

PERSONAL ASSISTANT INTERN — *Jul 2019 – Aug 2019*

FARN MUSIC DISCOGRAPHY *– Geneva, Switzerland (Full-time, On-site)*

Personal Assistant over a period of one month for the discography's president. Charged with various tasks, including data collection, management, and organization.

- **Organization** of categorized data and media files. Involved research and understanding of relevant software.

PRIVATE ACADEMIC TUTOR

SELF EMPLOYED *– Rome, Italy (Freelance, On-site)* *Sept 2017 – Dec 2019*
SELF EMPLOYED *– London, UK (Freelance, On-site)* *Sept 2020 – Dec 2024*
MYTUTOR *– London, UK (Freelance, remote)* *Sept 2024 – May 2025*

Academic Tutor for K-12 and university students in subjects such as Mathematics, Science, and English (primary students), Calculus, Advanced Mathematics, Chemistry, Physics, and Economics (secondary students), and Engineering, Data Science, and Computer Science (university students).

CHILDCARE WORKER *Jul 2018 – Aug 2018*

BORGO EGNAZIA HOTEL & RESORT *– Fasano, Italy (Full-time, On-site)*

Childcare assistant and worker in Borgo Egnazia's Teen Club, participating in educational and recreational activities throughout the day for children between the ages of 8 and 16.

- **Creativity & Engagement** with multiple children while planning various activities.

DAYTIME BARTENDER *Jun 2018 – Jul 2018*

CLUB 28 – *Villa Rosa di Martinsicuro, Italy (Full-time, On-site)*

Daytime bartender, waiter, and kitchen aid.

- **Customer Service & Attention to Detail** while taking, preparing, and serving high volumes of orders.
- **Collaboration & Coordination** between members of staff.

EDUCATION

QUEEN MARY UNIVERSITY OF LONDON – *London, England* ***2020 – Present***

Ph.D. AERONAUTICAL ENGINEERING *(Full-time, on-site) – UKRI EPSRC Sponsored Research Grant* *2023 – Present*

Research Project: Damage Tolerant Ultralightweight Mechanical Metamaterials for Future Air Transportation. Development of novel design pathways for the manufacturing of distorted lattice metamaterials. Topology and stochastic disorder optimization through adaptive sampling of FEA simulations and novel machine learning algorithms to achieve multi-objective mechanical and material property optimization.

Publications:

- Structural Determinacy Study on the Mechanical Performance of Quasi-Disordered Lattice Metamaterials *Review*

Conference Presentations:

- Tenth International Conference on Engineering Failure Analysis (ICEFA-X) in Athens, Greece. *7 – 10 July 2024*
- Russel Binion's Research Symposium at QMUL *21 April 2026*

Modules: Statistical Thinking and Applied Machine Learning, Design Optimization, Advanced Mechanical Modelling of Materials, Computational Engineering.

BEng MECHANICAL ENGINEERING (HONS) *(Full-time, on-site)* *2020 – 2023*

Classification: First Class (Honours)
Dissertation Thesis: Predictive Modeling of Experimental Aerofoil Aerodynamic Coefficients using Machine Learning.
Awards: 2022/23 Beryl Beadle Prize – Outstanding Academic Achievement
Modules: Multivariable & Vector Calculus, Linear Algebra, Solid & Fluid Mechanics, FEA & CFD, Failure & Fracture Mechanics, Materials, Heat Transfer & Thermodynamics, Internal Combustion Engines, Energy Conversion, Control Systems, Sustainability (LCA: environmental, social, economic assessment), and Design & CAD.

AMERICAN OVERSEAS SCHOOL OF ROME (AOSR) ***2015 – 2020***

***Secondary School Diploma* – GPA: 3.97** *2020*

Awards: Certificate of Academic Excellence (2020), President's Award for Educational Excellence (2017, 2018, 2019)
Societies: Italian Honor Society, French Honor Society, Varsity Basketball

Advanced Placement International Diploma (APID) *2020*

Awards: AP Scholar with Distinction *(2019, 2020)*
Advanced Placement Exams: Calculus BC (5), Physics 1 (5), Physics C: Mechanics (5), Chemistry (5), Microeconomics (5), Macroeconomics (4), French Language & Culture (5), Italian Language & Culture (5).

VOULUNTEERING

FUNDRAISING

ITALIAN HONOR SOCIETY (IHS) at AOSR *– Rome, Italy* *Jan 2018 – Jun 2020*

FRENCH HONOR SOCIETY (FHS) at AOSR *– Rome, Italy* *Jan 2017 – Jun 2020*

The IHS and FHS aim to aid Italian and Francophone non-profit organizations, such as Save the Children & AGOP for the IHS, and Baobab & Médecins Sans Frontières for the FHS. As a member my role was not only to spread awareness for help needed by such organizations, but also to collect and guarantee the charitable use of donations.

URBAN DEVELOPEMENT

RETAKE ROMA – *Rome, Italy* *Sept 2010 – Sept 2017*

Member of the non-profit organization specialized in the relaunch and valorization of multiple areas of the city of Rome, enhancing integrated urban services using digital platforms and physics interventions.

SKILLS

LANGUAGES: Italian (native), English (native), French (proficient), Spanish (conversational).

PROGRAMMING: Python (advanced), Machine Learning (advanced), MATLAB (intermediate), Shell – Bash (intermediate), LaTeX (advanced).

SOFTWARE: Abaqus (advanced), SolidWorks (advanced), ANSYS (advanced), Creo (intermediate), Star-CCM+ (intermediate), Microsoft 365 (advanced), Google Workspace (advanced).

ADVANCED MATH & SCIENCE: Machine Learning, Data Science, Mechanical Engineering, Computer Aided Engineering (CAE), Linear Algebra, Multivariable Calculus, Physics, Chemistry, and more.

WEB: Web Development – Shopify, Square Space, Social Media Marketing, Search Engine Optimization.

CERTIFICATES: Enterprise Design Thinking Practitioner Program – IBM.

EXTRACURRICULAR

BACHELOR'S DISSERTATION CONTINUATION: Collaboration alongside an aerospace engineering master's student towards the adoption of the aerofoil aerodynamic coefficient predictive machine learning python model developed for my bachelor's dissertation to produce multi-element aerofoil coefficient predictions.

ML IN FINANCE PROJECT: Development of a market data informed machine learning trading algorithm within a multidisciplinary team of research collaborators.

INVESTMENTS: Actively managing personal stocks, commodities, and cryptocurrency portfolios.

QUEEN MARY BANKING AND FINANCE SOCIETY – Member *2021 – 2022*

- AmplifyMe Finance Accelerator (Investment Banking & Asset Management)

PROGRAMMING: Actively contributing towards the development of algorithms for a variety of personal, group, and work-related projects. Learning Java, HTML, CSS, and R.

MUSIC: Guitar – 5+ years; Ukulele – 1 year.

SPORTS: Basketball – 6 years; Muay Thai – 1 year; Runner, gym enthusiast, and calisthenics athlete.

REFERENCES

References available upon request.