

CAROLINE S FERNANDES

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PROFILE & KEY SKILLS

Highly motivated mathematician with a master's degree, over 4 years of international work experience at top notch research institutions, and proven leadership and presentation skills. Experience working on and managing projects with multiple stakeholders, rapidly changing requirements, and short timelines. Quick to learn new industries, new software, and new methods and adept at applying skills to solve new and challenging problems.

- Data analysis
- Agile Project Management
- Requirements elicitation and development
- Mathematical modelling and simulation
- Programming experience in MATLAB, C/C++, MySQL, R, SAS
- MATLAB, Simulink, Abaqus, SolidWorks, Amira, Geomagic, OpenSim, IBM Rational DOORS, Jira, LaTeX
- Beginner level French
- Entitled to work in the UK - Possesses Tier 2 General (Dependent) Visa

PROFESSIONAL EXPERIENCE

DATA SCIENTIST, [Mudano](#)

London, England, April 2015 – Present

Working to build the data science team at Mudano and add predictive algorithms to Mudano's project management software.

- Worked to develop an in-house application to for Mudano's business operations to enable easy forecasting and planning of staffing needs on client and internal projects which can be leverage for more advanced financial and resource planning.
- On a client project, helped to define and gather data quality rules from the business for BCBS compliance and to automate rule implementation in SAS. Worked with business stakeholders to define data quality reporting requirements and develop a data quality report which could be used by the business at all levels and which became the centerpiece of the BCBS programme. Worked to help automate the data quality report generation process.

SCIENTIFIC ASSISTANT, [ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE \(EPFL\)](#)

Lausanne, Switzerland, April 2014 – March 2015

Responsible for all tasks related to the lab's ankle joint contract. Performed mathematical modelling, finite element simulations, and data analyses to improve ankle joint implants.

- Presented findings to project sponsor and the company's head of R&D for all ankle research to date, resulting in the contract being renewed for another year
- Identified a problem with an important study comparing two ankle implant designs, corrected the errors, and presented the study results to the sponsor on schedule
- Added a case to an investigation into a particular implant and as a result was able to give the sponsor quantitative evidence as to why a particular surgical step is very important

VOLUNTEER SOCIAL MEDIA COORDINATOR, [AMERICAN INTERNATIONAL WOMEN'S CLUB OF GENEVA](#)

April 2013 - 2014

- Designed and implemented a social media strategy for the club which led to increased community awareness of the club, new members, and increased participation by current members
- Managed the social media team of volunteers to ensure frequent, up to date, and relevant social media posts

ASSOCIATE TECHNICAL STAFF, [MASSACHUSETTS INSTITUTE OF TECHNOLOGY LINCOLN LABORATORY \(MIT LL\)](#)

Lexington, MA, USA, June 2010 - March 2013

Held leadership and project management roles in the area of aviation safety research for unmanned aerial systems. Performed a variety of modelling, research, and algorithm development tasks, held leadership and project management roles.

- Co-authored 2 papers in support of regulatory committees which were accepted into competitive conferences.
- Developed advanced collision avoidance and self-separation algorithms for ACAS-Xu utilising in Matlab, C/C++, Markov decision processes, and dynamic programming.
- Co-led the requirements and interface development process for a ground-based sense and avoid system with multiple sponsors and stakeholders and rapidly changing sponsor requirements
- Identified where the existing modelling and simulation framework was insufficient, solicited requirements from internal stakeholders, and managed the upgrade to ensure all project deliverables could be completed on time

- Led the modelling and simulation effort for an airborne sense and avoid program.

GRADUATE ASSISTANT, [CLEMSON UNIVERSITY](#)

Clemson, SC, USA, 2009 - 2010

- Managed a team of 4 students to successfully complete the final report for a smart grid technology industry project under contract with ITRON
- As a scale-up teaching assistant, aided the professor in teaching students how to program in Matlab, held office hours, and graded homework and exams

[CLEMSON UNIVERSITY COMPUTING AND INFORMATION TECHNOLOGY \(CCIT\)](#)

Clemson, SC, USA

STUDENT CONSULTANT, ADMINISTRATIVE DESKTOP SUPPORT, 2008

Showed excellent problem solving and customer service skills and was the first student promoted to Administrative Desktop Support division.

Provided remote and in-office IT support, troubleshooting, and problem solving to Clemson University's staff

CONSULTANT/HEP DESK STAFF, 2005 - 2008

Provided IT support, troubleshooting, and problem solving via phone, email, and in person at the university's IT help desk.

EDUCATION

[CLEMSON UNIVERSITY](#), CLEMSON, SC, USA, 2009 - 2010

M.S. MATHEMATICAL SCIENCES, awarded May 2010

Magna Cum Laude (3.85/4.0), Specialisation in Applied Analysis

Thesis Title: Sparse Representation for Detection of Transients Using a Multi-Resolution Representation of the Auto-correlation of Wavelets

[UNIVERSITÄT BREMEN](#), BREMEN, GERMANY, SUMMER 2009

GRADUATE LEVEL STUDY ABROAD

Research focused on a theoretical introduction to inverse problems and Tikhonov regularisation under the supervision of Prof. Dr. Peter Maass and Dr. Dennis Trede.

[CLEMSON UNIVERSITY](#), CLEMSON, SC, USA, 2005 - 2008

B.S. MATHEMATICAL SCIENCES, awarded December 2008

Cum Laude (3.63/4.0), Concentration in Applied and Computational Mathematics

Undergraduate Research: Tumour Detection using Magnetic Resonance Elastography

REVIEWED PUBLICATIONS & PRESENTATIONS

- Terrier, A., Guilemin, M., Fernandes, C.S., Crevoisier, X., "Comparative Analysis of Fixed and Mobile Bearing Total Ankle Prostheses: Effect on Tibial Bone Strain and Tibial Component Fixation," [Orthopaedic Research Society Annual Meeting](#), Las Vegas, Nevada, 2015. (Accepted for a Podium Presentation)
- Weibel, R. E., Edwards, M. W. M., Fernandes, C., "[Establishing a Risk-Based Separation Standard for Unmanned Aircraft Self Separation](#)," AIAA Aviation Technology, Integration, and Operations conference, Virginia Beach, Virginia, 2011.
- Weibel, R. E., Edwards, M. W. M., Fernandes, C., "[Establishing a Risk-Based Separation Standard for Unmanned Aircraft Self Separation](#)," Ninth USA/Europe Air Traffic Management Research & Development Seminar, Berlin, Germany, 2011.

COMMUNITY & PROFESSIONAL SERVICE & ACTIVITIES

- Advisor for a university women's organisation (Zeta Mu/MIT Chapter of [Kappa Alpha Theta Fraternity](#))
- **Risk Management Advisor**, 2010 - present: advise the COO in risk management
- **Advisory Board Chairman**, 2012 - 2013: advise the organization's CEO, lead the advisory board, and liaise with the university and the organization's international HQ
- **Scholarship Advisor**, 2010 - 2011: advise the scholarship officer in developing a scholarship programme
- Lincoln Laboratory **College Recruiting Team Member**, 2010–2013
- **Secretary, Webmaster, and Member of the Public Relations Committee** of the [New England Clemson Club](#), 2012–2013
- **Personal hobbies** include traveling the world, learning to cook new cuisines, website development, camping and over landing, cars and off-roading