Tom Fielder

Test and measurement engineer seeking a web development opportunity

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I have worked for several years in RF/Microwave metrology and have recently taken up web development study to build my software development skills. I am now looking for a remote-first role which will allow me to continue to grow my expertise in this area.

WORK EXPERIENCE

Higher Research Scientist
National Physical Laboratory (NPL)

06/2022 - Present — *Teddington, United Kingdom*

NPL is the UK's National Metrology Institute, developing and maintaining the national primary measurement standards of the UK.

Achievements/Tasks

- Direct responsibility for scheduling and delivering RF consultancy work with commercial organisations, including managing a small team of junior scientists to aid in project delivery.
- Upgrading software capability for service areas at NPL - most recently I have been asked to provide a software solution for the magnetic loop antenna measurement service.

Research Scientist
National Physical Laboratory (NPL)

01/2018 - 05/2022 — *Teddington, United Kingdom*

Achievements/Tasks

- Independently designed and produced upgraded software for VHF/UHF antenna radiation pattern measurements in an RF-anechoic chamber.
- Support data analysis for UKAS accredited measurement service (service reference EF06 "Wire antenna calibration service) by replacing complicated MS Excel spreadsheets with user-friendly MATLAB scripts.
- Produce reports compliant with ISO 17025 standards describing measurement results for customer equipment.
- Lead work to support UK SMEs with consultancy on RF measurement for a variety of applications ranging from climate change to the aerospace industry.
- Responsible for delivering a large increase in wire antenna measurement service efficiency at NPL, bringing the service from returning a 15% net loss before I joined to an 18% net profit as of January 2022

Duty Manager
University of Kent Sports Pavilion

09/2015 - 12/2017 — *Canterbury, United Kingdom*

EDUCATION

BSc (Hons) Physics with Astrophysics
University of Kent

09/2012 - 06/2015 — *Upper Second Class Honours*

SKILLS

HTML | CSS | JavaScript | React | Firebase | Git | Jest | C++ | MATLAB | LabVIEW

PERSONAL PROJECTS

The Odin Project (09/2021 - Present)

- Self-study course on full stack web development

tomfielder.co.uk (05/2022 - Present)

- My personal website, a one-page static site to show off some of the projects I've developed during my learning process

PUBLICATIONS / SOFTWARE RELEASES

An Assessment of the Radio Frequency Electromagnetic Field Exposure from A Massive MIMO 5G Testbed (11/2019 - 03/2020)

Paper available at IEEExplore - *my contribution relates to the practical aspect including planning and conducting measurements onsite in collaboration with key staff at the University of Surrey 5G/6G Innovation Centre*

FAR Radiation Pattern Software 2.0+ (07/2021 - 06/2022)

Upgrade of software written in C++ by a colleague at NPL. The software commands a Vector Network Analyser to take measurements of antenna transmissions, whilst rotating a turntable controlled via the ModBus protocol or National Instruments GPIB. The software produces an output (tab delimited .txt) mapping the measured signal against rotational steps. My contribution merges capability between two different labs at NPL (an anechoic chamber and an open area test site), replacing an older Microsoft Excel-macro-based solution previously in use from ~1997 to the present day, and enables NPL to offer antenna radiation pattern measurements with no limit on the number of frequency points or the azimuth rotation precision (previously 5 frequencies and 5° steps, respectively)

AntCert 2.5 - 2.7 (06/2018 - 10/2018)

Modernisation of legacy (VB6) tool which was used for ISO17025 compliant calibration certificate production at NPL. The code base had been lost due to lack of version control usage. I personally pieced together the code available and made modifications to better reflect the current requirements of the software including docx support, more intelligent graphing of certificate data and logging of input parameters. Prior to my intervention the last released version was 2.4a, released approximately 2003.