CHARLES BRETT
75 Newcombe Road
Coventry, UK, CV5 6NH
tel: 07785 272214
email: ceabrett@gmail.com
web: http://goo.gl/zuWXq

Education

2011-14 PhD in Mathematics at MASDOC, University of Warwick. Fully funded by EPSRC. Supervised by Professor Charlie Elliott and Dr Andreas Dedner.
2010-11 MSc in Mathematics and Statistics (Distinction) at MASDOC, University of Warwick. Fully funded by EPSRC.
2006-10 Master of Mathematics (MMath (Hons)) (First Class) at University of Warwick.

Publications

- Mesh adaptivity in optimal control of elliptic variational inequalities with point-tracking of the state. C. Brett, C.M. Elliott, C. Löbhard, M. Hintermüller. (Submitted to Interfaces and Free Boundaries).
- Phase field methods for binary recovery. C. Brett, A. Dedner, and C.M. Elliott. (Accepted in ESF OPTPDE Proceedings, 2013).
- Accuracy and stability of filters for dissipative PDEs. C. Brett, K.F. Lam, K.J.H. Law, D.S. McCormick, M.R. Scott, A.M. Stuart. (Physica D, 2013).
- Phase diagrams of knotted and unknotted ring polymers. A. Swetnam, C. Brett, M. P. Allen. (Physical Review E, 2012).

Work experience

Consulting for industry (paid) for We Buy Any Car, an online used car dealer. I consulted on improvements to their pricing model for 2 weeks in 2012. They asked to hire me again.
Industry study groups - I formulated and solved real world problems posed by non-specialists, then presented and reported on solutions. Selected problems I have contributed to:

- Modelling industrial coalescers, for Pall Corporation at Mathematical Problems in Industry 2012;
- Inertial navigation for divers, for VR Technology at the European Study Group with Industry 2012.

Teaching - TA for class of 15 maths students, 2012. Supervisor for groups of 4-5 students, 2010-12. Involved explaining difficult content, engaging students in discussion, marking assignments, and giving constructive feedback.

Skills

Programming and computer skills – Significant experience in C/C++ from implementing finite element methods in DUNE-FEM. Have used Matlab and Fortran in my research, and taken courses in Java, Python, and parallel programming (OpenMP, MPI). Comfortable working in UNIX/Linux.
Teamwork – Long distance collaboration with a professor and PhD student from HU Berlin, which has involved 2 funded research visits. Also solved problems in groups of 3-20 at industry study groups.
Communication – Presented at numerous conferences, such as the Symposium on Variational Inequalities and PDE-constrained Optimization, HU Berlin, where I was invited to speak. Also teach undergraduates and coach the Warwick underwater hockey team.
Languages – German and Japanese. Intermediate level in both.

Leadership

President of Warwick Sub Aqua Club, 2013-14, which turns over ~£10000 annually.
Vice President of Warwick SIAM (Society for Industrial and Applied Mathematics) Student Chapter, 2012-13.
Organiser of SIAM National Student Chapter Conference 2013.
Captain of the Warwick underwater hockey team, 2012-13. Led the A team to 2nd place at the Student Nationals, our highest ever result.
Chairman of the MASDOC Student Staff Liaison Committee in 2011-12.

Achievements

Selected to represent Warwick SIAM Student Chapter at the SIAM Annual Gathering 2013 in San Diego.
Selected at Oxford Modelling camp to attend Mathematical Problems in Industry 2012 in Delaware.
Won Best Poster Award at Oxford/Warwick SIAM Day 2012.
Invited to attend Oberwolfach workshop on Interfaces and Free Boundaries, 2012.
Fundraised £3000 to take part in the British Schools Expeditionary Society to Norway in 2005.

Interests

Scuba diving (BSAC Assistant Diving Instructor), **powerlifting** (competed at the British Powerlifting Congress 2011), **mountaineering** (climbed Huyana Potosoi, 6088m).