Curriculum Vitae

CONTACT INFORMATION
Name: Emma Griffiths

PERSONAL INFORMATION
Citizenship: South African
Languages: German (A2)

EMPLOYMENT HISTORY

1. Ad-Hoc Lecturer: University Cape Town
   Dates of Employment: 2018-2019
   Position Details: Lectured two courses to master's students at the University of Cape Town
   Courses: Introduction to the Finite Element Method and Nonlinear Finite Element Methods.

2. Graduate Software Developer: Dariel
   Dates of Employment: 2020 – 2021
   Position Details: Development of software solutions for a variety of clients. Technologies used include Java, Spring Boot, Angular and Azure DevOps. Some work in AWS (Lambda and ECS).

3. Postdoctoral Researcher: Friedrich-Alexander-Universität Erlangen-Nürnberg
   Dates of Employment: November 2021 – Present
   Position Details: Involved in the creation and simulation of brain models to simulate neurosurgery. This position involves the solving of complex and large problems that have never been attempted before. During this time MATLAB, Python and C++ were explored and utilized to some degree.

EDUCATION

1. Undergraduate studies
   Degree: Mechanical Engineering (BscEng(Mech))
   Completed: December 2015

2. Post-Graduate Studies
   PhD (Mech Eng) in Computational and applied mechanics (CERECAM) at the University of Cape Town. A focus on finite element multi-physical simulations of hierarchical composites with the aim of understanding the micro-mechanical mechanisms present.
   Conferral date: December 2020

COMPUTATIONAL SKILLS

- Programming languages:
  - Java (including experience with JavaFX)
  - JavaScript and Typescript
  - Python
  - Matlab
  - MySQL, PostgreSQL, MongoDB
  - C++

- Confident with Angular, React and Spring Boot frameworks
- Experience in Linux OS
- Experience using git, AWS (Lambda, ECS), Azure DevOps
- Extensive knowledge of Abaqus (Finite Element Analysis software)

CERTIFICATIONS

- AWS Certified Cloud Practitioner (Validation Number B6ZSGBNBLE1QQM3P)

PERSONAL PROJECTS

- GitHub: https://github.com/EmmaTG

PUBLICATIONS

1. Emma Griffiths, Swantje Bargmann, and B. Daya Reddy. “Elastic behaviour at the nanoscale of innovative composites of nanoporous gold and polymer.” Extreme Mechanics Letters, 17, (2017):16-23. https://doi.org/10.1016/j.eml.2017.09.006

2. Emma Griffiths, Jana Wilmers, Swantje Bargmann and B. Daya Reddy. “Nanoporous metal based composites: Giving polymers strength and making metals move.” Journal of the Mechanics and Physics of Solids, 137, (2019):103848. https://doi.org/10.1016/j.jmps.2019.103848

3. Emma Griffiths, Celal Soyarslan, Swantje Bargmann and B. Daya Reddy. “Insights into fracture mechanisms in nanoporous gold and polymer impregnated nanoporous gold.” Extreme Mechanics Letters, (2020): 100815.

4. E. Griffiths, J. Hinrichsen, N. Reiter, S. Budday. “On the importance of using region-dependent material parameters for full-scale human brain simulations.” European Journal of Mechanics - A/Solids 99, (2023):104910. https://doi.org/10.1016/j.euromechsol.2023.104910

5. E. Griffiths., & S. Budday. (2022). Finite element modeling of traumatic brain injury: Areas of future interest. Current Opinion in Biomedical Engineering, 24, 100421. https://doi.org/10.1016/j.cobme.2022.100421