Tharangini Subramanian

Student - MSc Computational Materials Science

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About me

A skilled and enthusiastic learner, with experience in the field of finite element method and Phase field method, seeking a position in the field of materials research..

Work experience and internships

Apr 2019–Oct 2019 **Intern**, *Robert Bosch GmbH Zentrum Für Forschung Und Voraus*, Renningen.
- Development of a computational model using multi- component multi- phase framework OpenPhase
- Investigation of microstructure evolution under different processing conditions during eutectic bonding
- Theoretical understanding of phase field method, nucleation, solidification and phase diagrams
- Python script to modify input files and submit multiple simulations simultaneously
- Experience with Git

May 2018–Mar 2019 **Student assistant**, *TU Bergakademie*, Freiberg.
- Solving phase field coupled with conservation of momentum equation by finite difference method in Python
- Martensitic phase transformation
- Theoretical understanding of phase field method

Sep 2016–Feb 2017 **Research assistant**, *Indian Institute of Technology*, Kanpur.
- Numerical study of mixing and combustion in cavity- based supersonic combustion chamber
- Extensive use of Ansys FLUENT in simulation, GAMBIT in modelling and discretization of the system and MATLAB in calculation of mixing ratio

Jul 2014 –Jul 2014 **In-plant trainee**, *Hindustan Aeronautics limited*, Bengaluru.
- Understanding of flight structure and controls
- Understanding on design and development of Tejas and LCA

Dec 2013–Jan 2014 **In-plant trainee**, *Pricol technologies limited*, Coimbatore.
- Application of concepts from mechanics of materials and aircraft structures to develop a cost and performance efficient design
- Basic introduction of Hypermesh

Education

2017–Current **Master of Science**, *TU Bergakademie*, Freiberg, Germany, *Computational Materials Science*.
ECTS: 2.09/4

2012–2016	**Bachelor of Technology**, *Amrita Vishwa Vidyapeetham*, Coimbatore, India, *Aerospace Engineering*. CGPA: 8.8/10 with distinction
2011–2012	**High School Diploma**, *Bharatiya Vidya Bhavan*, Coimbatore, Germany, *Maths, Physics, Chemistry, Biology*.

Projects

2019–2020	Ongoing: Master thesis: Study of metal induced crystallization in OpenPhase framework
2018–2019	Vibration analysis of a cracked beam by finite element analysis in Python
2018	Non- linear finite element analysis on a metal plate with a hole in MATLAB
2018	Irradiation damage algorithm to observe dislocation motion and accumulation in Python
2018	Developing a GUI calculator incorporating fractional entries in MATLAB
2015–2016	Bachelor thesis: Studies on mixing and combustion in a cavity- based supersonic combustor
2015	Conceptual preliminary design of a maritime surveillance aircraft
2015	Flight testing of an RC aircraft
2015	Aerodynamic Optimisation of UAV
2014–2015	Incorporation of Vibration Absorbers in machine tools like Lathe
2014	Morphing wing airfoil analysis using ANSYS FLUENT

Languages

Tamil	Native	*C2*
English	Proficient	*C1*
German	Intermediate	*B1*

Skills with experience

Git	Very good
MATLAB	Very good
Python/c++	Very good
OpenPhase	Very good
Ansys FLUENT	Good
Comsol	Good