ELANKOVAN M G
ME17S300 | 55/ME/21/038

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I. ABOUT ME

As a person with strong inclination towards STEM I look forward to a significant opportunity to work in the next generation state-of-the-art technologies. I have a strong desire to exercise my diverse skills-sets & knowledge to solve some of the challenging problems and wish to build a professional career at *Micron Technologies*, therby serving our global community

II. EDUCATION

Program	Institution	%/CGPA	Year
M.S.(Interdisciplinary, **Mechanical & Physics**)	Indian Institute of Technology Madras, Chennai	7.8/10	2020
B.E.(Mechanical)	Thanthai Periyar Govt. Institute of Technology, Vellore	7.32/10	2016
Class XII (TN State Board)	Velammal Matric. Hr. Sec. School, Chennai	92.9%	2012
Class X (Matriculation Board)	Velammal Matric. Hr. Sec. School, Chennai	91.8%	2010

III. COURSEWORK

1. Academic Courses

1. Application of Molecular Dynamics **(9/10)**
2. Finite Element Analysis **(8/10)**
3. Foundations of Computational Materials Modelling **(8/10)**
4. Structure & Properties of Grain Boundaries and Interfaces **(7/10)**
5. Advanced Mechanics of Solids **(7/10)**
6. Urban Resilience **(9/10)**
7. Social Entrepreneurship**(8/10)**
8. Innovative Entrepreneur-I **(9/10)**

2. Online Courses

1. Introduction to Linear Algebra With Matlab (MathWorks)
2. Introduction to Statistics With Matlab (MathWorks)
3. Machine Learning With Matlab (MathWorks)
4. Deep Learning With Matlab (MathWorks)

IV. SKILLS

Programming Languages	Python(intermediate), C, C++, JAVA
Scientific Computing	MATLAB(proficient), SageMath, Mathematica
CAD Modelling	CATIA V5(proficient), Autocad 2D, SolidWorks, NX-CAD
Simulation Tools	Molecular Dynamics using LAMMPS, NX-Nastran, Ansys
Documentation	Markdown(proficient), LaTex(intermediate)

☐ **Language competency:** English(*Proficient in writing, verbal and presentation*), Tamil(*proficient*),Spanish(Learning-A1)

☐ **Computer proficiency:** Strong understanding of Linux/Ubuntu environment(*Shell scripting in linux*)

☐ **Research Aptitude:** Skills to approach problem from first principles;
Good at solving mathematical problems using Python/Matlab scripting

V. WORK EXPERIENCES

1. Freelance Educator(Engineering Mathematics & Material Science)　　　　March 2018 - Current

- Classroom(300+Hrs) and online(35+Hrs) teaching experience in the following topics:
  A. ENGINEERING MATHEMATICS: *I. Determinants & Matrices; II. Calculus & Differential Equations; III. Vector Calculus; IV. Functions of Complex Variables and Integration; V. Transforms; VI. Numerical Methods; VII. Applied Probability;*

  B. MATERIAL SCIENCE. (View detailed syllabus)

2. Project Lead(PrepLeaf Preparations Pvt. Ltd)   June 2020 - Current

- **Project Ideation:** Conceived a project idea and collaborated with PrepLeaf Preparations Pvt. Ltd as our technology partner to build online exam product. Also resposible for strategic Sales & Marketing
- **Project Management:** Engage as a team-player, assign job roles to teammates, track progress and maintain a closed feedback loop from users to continuously improve quality of the product;

3. Project Associate(Chennai Urban Resilience Program)   May 2019 - July 2019

- **International students team:** As a multi-disciplinary students team from *University of Cambridge, IIT Madras, Yale NUS College, University of British Columbia* we addressed key solutions to Chennai city's solid waste management. This project was mentored by Prof. Murali(Sauder School of Business, UBC)
- This social project was sponsored by *The Rockefeller Foundation*

4. Teaching Assistant(IITM)

- **ME1480 Engineering Drawing:** Conducted several CAD drawing tutorials using AutoCad 2D
- **ME5201 Computational Methods in Engineering:** Conducted a 3 Hours hands-on tutorial on *Introduction to Python programming language* for the course participants

VI. ACADEMIC RESEARCH

I. Atomistic Simulations of Grain Boundary(GB) Interfaces using MD Simulations in Silicon

- We computed the grain boundary energy curve of Si GBs with $< 100 >$ and $< 110 >$ misorientation axis. Further, these models are used to study the thermal heat transport properties. We used classical non-equilibrium molecular dynamics simulation technique to estimate the thermal resistance of the GBs

II. Elastic Phonon Wave-packet Scattering at 2D Grain Boundaries using Molecular Dynamics

- To get deeper insights into the mechanism of heat transport at the interfaces, the role of phonon wave-packet scattering and vibrational density of states is studied at 2D grain boundaries modeled using LJ potential.

VII. PROJECTS

- **Investigation and Design of customized Airfoil for Vertical Axis Wind Turbine**   (UG)
- **Kinetic Energy Recovery System Adopted Bicycles**   (UG Mini Project)
- **Conceptual Design of Electromagnetic Damper for Motorcycle Suspension**   (Hobby Project)
- **Numerical solution for plane problems using Finite Element approach**   (ME6800)
- **Uniaxial Tensile Test of Single Walled Carbon Nanotube: A MD approach**   (AM6512)
- **MD Simulation of Dislocation Dipole**   (ME7244)
- **Urban Horticulture Project: Solid Waste Management**   (Social Project)

VIII. PUBLICATIONS

- Elankovan M G, Dr A. Sai Ramesh, *Conceptual design of Electromagnetic Damper for motorcycle suspension*,International Journal of Engineering Research Technology, Vol.4, Issue 08. (DOI: 10.17577/IJERTV4IS080580)
- **Manuscript under preparation:** Elankovan M. G, Dr Narasimhan S., Dr. C. V. Krishnamorthy, *Thermal Resistance and Energies of $< 100 >$ Symmetric Tilt Grain Boundaries in Silicon: A Molecular Dynamics Study*, *Physical Review B* (Abstract)

IX. ACADEMIC ACCOMPLISHMENTS

- **Selected** for *17th European Mechanics of Materials Conference*-May 2020, Technical University of Madrid, Spain
- **Attended** *International Winter School on Social Entrepreneurship*-January 2018, CSIE, IIT Madras
- **Winner** : Paper presentation in National Technical Symposium-2014, CIPET, Chennai
- **Best Paper presentation award** National Technical Symposium 2015, TPGIT, Vellore
- **Winner** ; CAD Modelling in National Technical Symposium-2014, CIPET, Chennai
- **Winner** ; CAD Modelling in National Technical Symposium-2015, Velammal Engg. College
- **Winner** ; CAD Modelling in National Technical Symposium-2015, Adhiparasakthi College of Engg.

X. OTHER INTERESTS

- **Music:** Classical guitarist **Sports:** Squash, Cycling and Swimming
- **Leisure Activities**: Cooking, Gardening and Journaling