Sanath Kottursheettar

s.b.kottursheettar@student.tudelft.nl
+31 6 13 23 08 95

Education

TU Delft Aug 2021 - May 2023
Master of Science, Mechanical Engineering- Energy, Process and Flow Technology. *Delft, The Netherlands*

National Institute of Technology Karnataka, Surathkal Aug 2016 - July 2020
Bachelor of Technology, Mechanical Engineering, CGPA: 9.15 *Karnataka, India*

- *Academic Performance- Top 5% of class*

Experience

Transient Model Improvement for Large Diesel Engines | Project Intern May 2019 - July 2019
Caterpillar, India, R&D, Large Power Systems Division. *Bangalore, India*

- Various causes for turbo-lag were identified. Impact of thrust and journal bearing friction on boost build-up was studied in detail.

Modelling of Blood Flow in Artery(*CFD*) | Research Project Aug 2019 - March 2020
National Institute of Technology Karnataka, Surathkal *Karnataka, India*

- Flow in a 2-d channel is modelled using SIMPLE algorithm. The walls are being modelled as elastic membranes using the Immersed Boundary Method.[*Wrote simulations in C++*]
- The Immersed Boundary Method is validated by simulating the 'Deformation patterns of elastic capsule in 2-d channel flow'.

Dynamics of Self-propelled filaments | Research Intern May 2018 - July 2018
Indian Institute of Technology Madras *Chennai, India*

- Required understanding of flows at low Reynolds numbers, collective behavior of self-propelled particles and interactions between particles and also interactions between the fluid and particle. Had to come up with a way to model filaments in the code.

Projects

Mechanical Simulation Of 3-axis Accelerometers using Single Proof-mass.

- A 3-axis, single proof-mass, comb-drive accelermeter was modeled and simulated using COMSOL. Accelerations in all the 3 directions with a single device could be captured without compromising sensitivity(deflection/acceleration) in any direction.

Electro-Magnetic Desalination

- In this project a theoretical model is developed for electromagnetic-mechanical salt removal process and solved numerically to investigate the optimum parameters for separation. [*COMSOL*]

Energy Harvesting Using Vibrating Beams

- Magnets were attached to the end of a vibrating cantilever beam and coils were placed such that the changing magnetic field produced electricity in them.

Combined Tuber Crop Harvester and Seeder

- The multi-utility vehicle is a simple, easy to use, mechanically driven and cost effective culmination of mechanisms for sowing and harvesting.

MATLAB - Synthesis Of Mechanisms

- Slider Crank Mechanism, Four-bar Mechanism, Quick-Return mechanism were simulated using MATLAB during the sophomore year.

Study of the Influence of Inner Lining Material on Stratification

- Design was modeled using CATIA and analysis was carried out using ANSYS fluent. Results showed formation of uniform temperature layers leading to formation of stable thermocline which helps in efficient thermal energy storage.

Technical Skills

Programming: C, C++, Python, Matlab
Application Softwares: ANSYS Fluent, CATIA, ABAQUS, COMSOL Multiphysics
Coursework: Advanced Fluid Dynamics, Advanced Heat Transfer, Advanced Applied Thermodynamics, Turbomachinery, Numerical Analysis, Linear Modelling, Non-Linear Mechanics, Viscous Flows, Turbulence.