

Curriculum Vitae – Ezhilmathi Krishnasamy

Basic information

Name: Ezhilmathi Krishnasamy
Date of Birth: June 9, 1984
Contact: 14c, Rue Bour
Bereldange, L-7216, Luxembourg
ezhilmathi.krishnasamy@uni.lu
Ph:0046735636145

Experience

Current employment:

(2019-) Research Associate
University of Luxembourg
Description: PRACE6-IP, HPC and Teaching

Previous employment:

- (2015-2019) PhD student in Computer Science**
Basque Center for Applied Mathematics
and Basque University
Description: Scientific Computing in application with Computational Fluid Dynamics.
Supervisor: Johan Jansson
- (2016-2019) PhD student in Computer Science**
KTH Royal Institute of Technology
School of Electrical Engineering and Computer Science (EECS)
Description: Scientific Computing in application with Computational Fluid Dynamics.
Supervisor: Johan Jansson
- (2015) Research Assistant**
Linköping University
Department of Solid Mechanics
Description: Worked on Design optimization and GPU implementation of it.
- (2014) Master Thesis Student**
Simula Research Laboratory
Department of High Performance Computing
Description: Implemented the wave propagation finite difference method (stencil computation) on the multiple GPUs and Shared Memory Architecture.

Higher education degrees

- (2015) Master's in Specialization of Computational Science**
Linköping University
- Numerical Methods ,Numerical Linear algebra and Optimization.
 - Programming in Matlab, C/C++ and Parallel programming.
 - Computational fluid dynamics,Heat transfer,Finite element methods and Continuum mechanics
- Thesis:Hybrid CPU-GPU Parallel Simulations of 3D Front Propagation

(2012) **Master of Science in Energy and Environmental Engineering**

Linköping University

- Renewable energy methods-analysis and case studies.
- Energy efficient methods for the industry.
- Resource efficient products and their Life Cycle Analysis.

(2007) **Bachelor in Chemical Technology**

Anna University, India, Chennai

- Fluid Mechanics, Mass Transfer, Heat Transfer and Numerical Methods.
Organic & Physical Chemistry, Material Science, and Material Technology,
 - Transportation Phenomena, Statistics and Linear Programming.
 - Chemical Engineering Thermodynamics, Chemical Reaction Engineering,
Chemical Process Calculation and Chemical Process Industries Design.
- Thesis: Design of Debutanizer in Fluidized Catalytic Cracking

(2003) **Diploma in Chemical Technology**

Institute of Chemical Technology, India, Chennai

- Fluid Mechanics, Mass Transfer and Heat Transfer and Mechanical Operations.
- Physical Chemistry, Organic Chemistry, Process Engineering and Economics,
Stoichiometry and Engineering Materials.
- Engineering Chemistry, Engineering Physics and Engineering Mathematics.

Research Merits

Manuscript in preparation:

1. Adaptive Direct FEM simulation of the flow past two tandem spheres and comparing with other higher order methods.

Ezhilmathi Krishnasamy, Massimiliano Leoni, Johan Jansson

2. Turbulence multiphase flow in application with 3D printing.

Ezhilmathi Krishnasamy, Johan Jansson, Laura Saavedra

Conferences:

1. Adaptive Direct FEM Simulation with Unicorn/FeniCS-HPC for CS1, 2018

Johan Jansson, Ezhilmathi Krishnasamy, and Massimiliano Leoni

2. Simulation of the HarshLab floating platform for offshore experimentation using FeniCS-HPC, November 2017

One of several authors

Papers:

1. Multi-GPU Implementations of Parallel 3D Sweeping Algorithms with Application to Geological Folding.

Ezhilmathi Krishnasamy, Mohammed Sourouri, and Xing Cai: Procedia Computer Science

2. Direct FEM large scale computation of turbulent multiphase flow in urban water systems and marine energy

Ezhilmathi Krishnasamy, Johan Hoffman, and Johan Jansson: ECCOMAS Congress 2016

3. Towards HPC-embedded. Case study: Kalray and message-passing on NoC

Pedro Valero-Lara, Ezhilmathi Krishnasamy and Johan Jansson

Journal:

1. Time-Resolved Adaptive Direct FEM Simulation of High-Lift Aircraft Configurations
Johan Jansson, Ezhilmathi Krishnasamy, Massimiliano Leoni, Niclas Jansson and Johan Hoffman
Numerical Simulation of the Aerodynamics of High-Lift Configurations, pp.67-92

Mater thesis:

1. Hybrid CPU-GPU Parallel Simulations of 3D Front Propagation
Krishnasamy, Ezhilmathi
Linköping University, Department of Mechanical Engineering, Solid Mechanics

Pedagogical merits:

Teaching

- **Parallel and Grid Computing (MICS S3)**
Teacher (one of several)
University of Luxembourg, 2019-
- **High performance finite element modelling (edX MOOC)**
Teacher (one of several)
KTH Royal Institute of Technology, 2017-
- **DD1331 Fundamentals of Programming 5.0 credits**
Teaching Assistant (TA)
KTH Royal Institute of Technology, 2018-2019
- **DD1396 Parallel and Concurrent Programming in Introduction to Computer Science 3.0 credits**
Teaching Assistant(TA)
KTH Royal Institute of Technology, 2018-2019
- **DD2325 Applied Programming and Computer Science 7.5 credits**
Teaching Assistant(TA)
KTH Royal Institute of Technology, 2018-2019
- **DD1388 Program System Construction Using C++ 7.5 credits**
Teaching Assistant(TA)
KTH Royal Institute of Technology, 2018-2019
- **SI1336 Simulation and Modeling 6.0 credits**
Teaching Assistant(TA)
KTH Royal Institute of Technology, 2018-2019
- **DD1327 Fundamentals of Computer Science 6.0 credits**
Teaching Assistant (TA)
KTH Royal Institute of Technology, 2018-2019

Educational Prize:

1. One of summer school participant at the **PRACE Summer of HPC** in 2013.
And represented from Sweden. Spent two months in Edinburgh and Ljubljana.

Research and Educational Merits

1. IVA Research2Business 100-list.
2. MOOC-HPFEM with 10000+ participants, KTHs largest MOOC.
3. Pilot projects at the highest echelon of the aerodynamics industry.
4. Pilot project in UAV for autonomous navigation (Jetson GPUs).
5. Bicky Chakraborty Entrepreneur Program, 1 of 8 winners, KTH.
6. KTH Innovation Startup (Icarus Digital Math).
7. KTH Innovation Brighter Program class of 2019.