Chandramouli Gnanasambandham

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06.08.1990
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PROFILE

I am a passionately curious engineer with excellent intercultural communication skills. I have been spearheading the development of robust multi-fidelity vehicle models for highly-scalable simulations with over 200 active users in my current organization. Moreover, I have been first author of 6 peer-reviewed journal articles during my time at the academia. All this was possible, thanks to my exceptional adaptability to new/rapidly changing environments and my extraordinary analytical, project management and team skills. I am looking forward to continuing my work at TORC EU in developing more dependable vehicle models to support rapid autonomy software-development cycles with the goal of safe trucking.

LANGUAGES

- Proficient | German
- Proficient | English
- Mother tounge | Tamil
- Advanced | Hindi

WEB

Linkedin
linkedin.com/in/gnanasambandhamc

Medium
chandramoulig.medium.com

Matlab
MatlabCentral Profile

EDUCATIONAL QUALIFICATIONS

May 2016- April 2021
Ph.D. in Mechanical Engineering
University of Stuttgart

October 2012- April 2016
Master of Science in Commercial Vehicle Technology
Technical University of Kaiserslautern, Grade: 1.9

June 2008- April 2012
Bachelor of Engineering in Production Engineering
Anna University, Chennai, India, Grade CGPA: 8.3/10

PROFESSIONAL CAREER

August 2021 - present
Daimler Truck AG, Stuttgart
Vehicle model engineer

- Develop and maintain multi-fidelity vehicle models for highly-scalable simulations in the context of virtual validation
- Qualify vehicle models following the ISO-26262 standards

May 2016 - April 2021
University of Stuttgart
Scientific staff at the institute for engineering and computational mechanics (ITM)

October 2015 - April 2016
Fraunhofer Institute (ITWM), Kaiserslautern
Intern in the department of mathematics for vehicle engineering

October 2014 - September 2015
Daimler AG, Böblingen
Intern in the department of pre-development vehicle suspension

October 2012 - October 2014
Kaiserslautern Formula Student Racing Team
Suspension and vehicle dynamics specialist

December 2013 - September 2014
German Research Center for AI (DFKI), Kaiserslautern
Junior software developer in the department of embedded intelligence

AWARDS

Best Presentation Award
Optimization of Vehicle Parameters based on Lap-Time Simulations using Multiobjective Evolutionary Algorithm

Best Presentation Award
An Adaptive Approach to Real-Time Estimation of Vehicle Dynamics Parameters using Kalman Filtering

Both awards were offered by ALTEN GmbH in the year 2014 and 2015, complemented with a cash-prize of **500€** respectively.

OTHER FUN PROJECTS

July 2020 - present
Raspberry Pi Powered Smart-Home
As part of a on-going hobby project, I have built a versatile Raspberry-Pi smart home network with remote-ssh-access, custom file storage server with automatic backups using `rsync`, Zigbee2Mqtt server for controlling IOT devices using siri/google-nest and custom automations.

Juni 2015
Machine Learning Suite
Implementation of a deep convolution neural network for optical character recognition as part of a freelance software project in Matlab. To increase performance the MEX API was used.

Juni 2014
Driver-in-the-Loop Simulator
As part of my work for the KaRaT formula student racing team, I developed a driver-in-the-loop simulator based on a communication interface between IPG CarMaker and Matlab/Simulink.

TECHNICAL SKILLS

Programming Languages:

- ■■■■■ 9 years | C/C++
- ■■■■■ 9 years | Matlab
- ■■■■□ 6 years | BASH
- ■■■□□ 3 years | Python

Betriebssystem

- ■■■■■ Linux (Debian, Ubuntu)
- ■■■■□ Microsoft Windows

Simulation and Data Skills:

- **Matlab/Simulink:** Modelling, simulation, numerical optimization, SiL/DiL simulations, Matlab GUI, FMI
- **C/C++:** MEX API, SilverBypass, FMI, ROS, TCP/IP and UDP interfaces
- **Multibody-Simulation:** LMS Virtual.Lab Motion, Neweul-M^2, MSC Adams, Project Chrono
- **Python:** AWS Athena, Ploty Dash, Flask, NumPy, SciPy, Pandas
- **Other Software Tools:** Silver Virtual-ECU, COMSOL Multiphysics, OpenSCAD, Blender, OptiSlang, Oracle VM VirtualBox

Software Development Tools:

- **CI Tools:** Git, Github CLI, Jenkins, Docker
- **Development Environments:** `vim`, Visual-Studio Code, Eclipse
- **Technologies:** CUDA, PETSc, EIGEN, Object Oriented Programming (OOP), OpenGL
- **Debuggers/Profilers:** `gdb`, `valgrind`, `calgrind`, Intel VTune

SELECTED PUBLICATIONS

Gnanasambandham, C.; Fleissner, F.; Eberhard, P.: Enhancing the Dissipative Properties of PDs using Rigid Obstacle-Grids. Journal of Sound and Vibration, Vol. 484, p. 115522, 2020.

Gnanasambandham, C.; Stender, M.; Hoffmann, N.; Eberhard, P.: Multi-Scale Dynamics of PDs using Wavelets: Extracting Particle Activity Metrics from Ring Down Experiments. Journal of Sound Vibration, Vol. 454, pp. 1-13, 2019.

Gnanasambandham, C.; Schönle, A.; Eberhard, P.: Investigating the Dissipative Effects of Liquid Filled PDs using Coupled DEM-SPH Methods. Computational Particle Mechanic, Vol. 6, pp. 257-169, 2019.

Stuttgart, Tuesday 3rd January, 2023

Chandramouli Gnanasambandham