

Mehdi Sepahvand

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Summary

- Highly motivated, driven professional engineer with experience in programming, analytics, project engineering, project management and research and development.
- Able to work to tight schedules, resourceful, analytical, team player, creative and meticulous. Very quick learner, adaptable to change and highly enterprising.
- Areas of expertise: Data analytics, Robotics process automation, cloud computing, software engineer, product development

Education

Master of Information Technology (Software and cloud computing)

2020-2021 Swinburne University of Technology (GPA 4/4)

09/2020- 12/2023 University of Pennsylvania (GPA 4/4)(*leave of absence*)

Master of Engineering (MEng), Mechatronics engineering (*minor statistics*)

09/2005- 08/2007, University of Toronto, Canada (GPA 3.7/4)

Bachelor of Engineering (BEng), Mechanical engineering

09/2002- 08/2005, Coventry University, UK (GPA 4/4)

Professional experience

• August 2020- Present, Freelance software engineer

Languages: Java, Python, C#, C

Front end: HTML, CSS, JavaScript, React

Data analytics: R, NumPY, Pandas, SQL, Tableau

Cloud: AWS, GCP

Responsibilities:

- Developed number of software applications and games in Java (OOP) and Python
- Developed a number of APIs using Spring and Hibernate, and deployed to AWS
- Detailed machine learning model development using various clustering and classification models. Primary tools was using R. Models used include SVM, KNN, K-means, Random forests, PCA, CART, linear regression, logistic regression
- Carried out machine learning modeling on large data sets, with visualizations on Tableau
- Advanced data analytics model development using deep learning, collaborative filtering, neural network models and Bayesian networks
- Predictive analytics using time series models. Primary models used is exponential smoothing

Currently undertaking further study and training in Tableau, TensorFlow and AWS MongoDB

• July 2012- August 2020, Product design engineer

Assa Abloy Australia, Melbourne

Roles: project engineer, project manager, design & development engineer, R&D engineer

Responsibilities:

- Product design and development from initial concept to launch
- Firmware design and development (C, C++)

- End user software development (C#)
- Mobile app development for new product (Dart)
- Detailed analysis through mathematical modeling, data driven design and analysis of very large data sets (R, Python, SQL)
- Project management, planning and execution through viability and financial analysis
- Stakeholder engagement and management
- Technical support and customer support

Achievements:

- Designed and developed range of security products for domestic and international market (Total of 15 products under Yale, Assa Abloy, Lockwood brands, 8 Patents generated)
- Led development projects using lean methodology, on a range of firmware, mechanical and electromechanical products from the initial concept phase through to mass production.
- Resolved technical issues and problems on existing products, through engineering analysis, data analysis, root cause analysis, testing through to production. Initiated data driven design across the department. Analytic models used: Lifetime data modeling, predictive modeling, time series, DOE and statistical analysis
- Mentored junior employees on engineering practices, procedures, problem solving and team work
- Designed and developed installation and instruction manuals for online and printed media (HTML, CSS, JavaScript)

• **October 2011- June 2012**, Application engineer

Central Innovation Pty Ltd (Dassault systemes), Melbourne

Roles: Engineer, instructor, API development, Customer liaison

Responsibilities:

- Application development (VB and C++)
- Database management and development (MS SQL server)
- Technical support and customer support
- Sale support through pre-sales presentations and customer engagement
- Training instructor

Achievements:

- Developed an API that automated generation of new parts and very complex mechanical components
- Assisted customers to reduce time to production through application of data driven design methodology
- Was responsible for CFD and EPDM across Australia, from implementation to training to technical support
- Provided technical courses, webinars and 1 on 1 training, across Australia on new applications to users.

• **June 2010- September 2011**, Design and development engineer

Drivetrain systems international holdings Pty Ltd, Melbourne, Australia

Responsibilities:

- Automotive transmission design and development
- Resolution of customer issues and technical defects
- Technical support of other departments

- Junior staff training

Achievements:

- Carried out design and validation of the new front wheel drive 6 speed transmission (Data acquisition and analysis, on board diagnostics and calibration of ECU)
- Carried out design and bench-marking exercises on the dual clutch transmission project
- Carried out hydraulic testing of transmissions parts to improve their functionality
- Developed and completed research projects to improve product design and efficiency

• **November 2008- April 2010**, Design and development engineer

Linamar Corporation, Toronto, Canada

- Carried out major design projects on the braking systems
- Product testing and validation
- Prepared test plans and control procedures in accordance with international standards
- Data acquisition systems(CANape),data analysis and modelling
- Developed a statistical database for maintenance of production intensive machines on SAP business suite

• **September 2007- August 2008**, Design and development engineer (Graduate engineer)

Magna International, Ontario, Canada

- Worked in the powertrain systems team, carrying out reliability tests and analysis
- Carried out various redesign and change requests tasks
- Carried out root cause failure analysis and failure mode effect analysis on defective parts, as well as Weibull and statistical analysis
- Performed validation tests and developed methods to test parts such as design of experiments and multi factor experiments
- Carried out component and part testing and validation using LabVIEW, including hydraulic tests, dyno testing, pressure and integrity tests

• **September 2006- August 2007**, Teaching assistant

University of Toronto, Canada

- Carried out teaching assignments for undergraduate courses in dynamics, solid mechanics, fluid mechanics and engineering mathematics.

• **September 2006- August 2007**, Research and development engineer

Center for optimization and reliability engineering (C-More), University of Toronto, Canada

- Worked and studied reliability engineering and maintenance management
- Carried out lifetime data and statistical analysis of expensive capital assets
- Studied conditioned and preventative maintenance based monitoring of capital assets
- Carried out predictive based maintenance and replacement of various capital assets
- Carried out FMEA and RCA studies of various physical assets
- Worked on developing spare capital availability models based and replacement intervals

• **September 2005- January 2007**, Research and development engineer

Ultrasonic laboratory (UNDEL), University of Toronto, Canada

- Designed and constructed an ultrasonic microfluidic pump
- Conducted research on wave propagation and physics of acoustics.
- Worked extensively on biomedical and biological applications of acoustics.
- Digital signal processing (DSP) on numerous scans
- Data acquisition and analysis

• **October 2004- May 2005**, Graduate engineer

Dennis Eagles Limited, Warwick, UK

- Designed a customised hydraulic system for refuse collection vehicles
- Developed drawings and technical analysis
- Successfully designed and developed a hydraulic network and circuit

Patents

- 2020201052 ,[2018229456](#), [2017903692](#), [2015258186](#), 2018247572

Skills

- Programming: Python (Advanced), JAVA (Advanced), C++
- Web development: HTML (Advanced), JavaScript (Intermediate), jQuery, Bootstrap, React, Familiar with PHP
- Databases: SQL (Intermediate), MySQL, mariaDB
- Cloud: AWS (working knowledge of S3)
- Analysis software: R (Advanced), NumPy, pandas, MATLAB, SAS
- OS: Windows, Linux(Ubuntu)

Training and certificates

. Data analytics, data modelling, machine learning, Web development, Java programming, Cloud computing (AWS), Databases, SQL, Project management (PMI Institute), Robotic process automation

Major achievements and awards

- University of Toronto fellowship, 2005-2007
- Ranked 1st undergraduate students of class 2004, Mechanical Engineering Department
- Ranked Number 1st graduate across the school of engineering, 2004
- Awarded Institute of Mechanical Engineers (IMechE) Frederic Barnes Waldron 'Best student Prize', 2004
- Best student award in mechanical engineering and manufacturing by IMechE, 2004
- Best undergraduate project award in mechanical engineering by IMechE, 2004
- Awarded IMechE top chartered course student medal in mechanical engineering, 2004
- Universities UK award, 2001

Volunteering

- Australian Red Cross
- Community volunteer, (2010-2018), set up hiking camps and trips for group of up to 20. Set up accommodation for new arrivals to Melbourne, to ensure easier transition.
- Fire safety warden (2017-2019), in case of emergencies ensure safety protocols were followed
- First aid (2013-2017), I was a first aid officer for group of 20 people
- Quality auditor (2013-2018), ISO9000 quality audits to ensure processes were followed

References

Available on request.