

Nikola Stoyanov

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Generated on: February 16, 2019

Education

- **The University of Manchester** **Manchester, United Kingdom**
PhD Materials for Demanding Environments *September 2016 - to date*
 - PhD Thesis: Assessment of the fire resistance of structures after exposure to LNG
 - Supervisors: Prof. Y. Wang, Prof. H. Iacovides
 - Sponsors: Element Materials Technology
- **The University of Manchester** **Manchester, United Kingdom**
M.Eng. Civil Engineering with Industrial Experience *September 2011 - June 2016*

Employment

- **Element Materials Technology** **Warrington, United Kingdom**
Certification Engineer (FTE 0.2) *September 2015 - to date*
 - Developing in-house regression methods for predictive analysis
 - Developing calculation software with .Net, Python and VBA
- **Exova WarringtonFire** **Warrington, United Kingdom**
Trainee Engineer - Industrial Placement (FTE 1.0) *June 2014 - September 2015*
 - Assessment and predictive modelling of fire protection materials from test data

Skills

Languages: Bulgarian(native), English(fluent), German(B1)
Programming: C++, Fortran, Python, R, Matlab, Julia, shell scripting, LISP, \LaTeX
Databases: SQL, Hive
Version Control: Git, SVN
Scientific/Technical Computing: SciPy, Seaborn, ABAQUS, VTK, ParaView, GMSH
Machine Learning: Scikit-learn, TensorFlow
Operating Systems: GNU/Linux (Ubuntu, Scientific Linux), Windows

Academic & Professional Activities

- Contributing to the development of visualization tools for the exploration of large datasets using Python and VTK in conjunction with the residual stress research group at the University of Manchester.
- Developing an inverse heat transfer tool to predict heat transfer coefficients using the gradient descent with adjoint problem optimization technique with Python and Elmer scripting.
- Meshing tools to accommodate the cohesive zone model for crack growth in large datasets using Python.
- ABAQUS subroutine for the cohesive zone model using Fortran.
- Developed an induction heater electric device to allow for high temperature/rate testing of thermal protection and scripted the numerical model to explore the coupled electro-magnetic and thermal interaction using Gmsh and GetDP as part of the third year project at university.
- Developed the METAL calculator during the placement year in Exova to perform in-house regression models on test data using MS Excel (VBA) and Python. Responsible for generating a revenue of £25,000.

- Developed a finite difference software to perform thermal calculations during the placement year in Exova using Python.

Personal Projects

- Completed online courses on Machine Learning and Artificial Intelligence on Coursera.
- Competing in Kaggle competitions for data science.
- Personal website static page generator using Emacs and custom LISP script.
- Raspberry Pi 3 B+ touch tablet.

Awards & Honours

- **Exova Technical Conference 2015**
 - Awarded for technical contributions during the placement year.

Mentoring

- **J. Imran – Visiting High School Student** **Bolton, United Kingdom**
Modelling and evaluating airflow around an aerofoil using STAR-CCM+. *July 2018 - August 2018*

Coursework

Undergraduate Computational Hydraulics, Numerical Methods, Microsoft Office, ABAQUS, Solidworks, Matlab, Mathematica, AutoCAD, Nuclear Engineering, Computational Science, Structural Analysis I, II and III, Geotechnics I, II, III and IV, Fluid Mechanics I, II and III, Renewable Energy Systems, Steel and Concrete Structures I, Construction Materials I, II and III, Intermediate Calculus, Multivariable Calculus, Vector Calculus, Introduction to Statistics, Linear Algebra, Environmental Assessment, Operations Management, Fire Engineering, Water Engineering I, II

Extracurriculars

- **University of Manchester Athletics Club** **Manchester, United Kingdom**
Long Distance Running. 2011 - 2016