Dileep Nackathaya

https://github.com/dnackat/
https://www.linkedin.com/in/dnackat/

Email : dileepbn@gmail.com
Mobile : +91-7899129478

Education

- **North Carolina State University** — Raleigh, NC, USA
  Master of Science in Mechanical Engineering; GPA: 3.75/4.00 — *Aug 2010 – Dec 2012*
  Specialization: Computational Fluid Dynamics (CFD)
- **Visveswaraya Technological University** — Belgaum, India
  Bachelor of Engineering in Mechanical Engineering; Grade: First Class (74%) — *Sep. 2006 – July. 2010*

Continuous Learning

- **Statistics, Machine Learning, Data Science** — Udupi, India
  Self-learning (progress documented on LinkedIn and GitHub) — *Jan 2018 – Present*
  - **Statistics and Data Science MicroMasters (offered by MITx on edX)**: Four graduate level credit-eligible courses with challenging assignments and projects in Probability, Statistics, Data Analysis, and Machine Learning along with a final Capstone exam *(Skills: Python, R, PyTorch, NumPy, SciPy, Matplotlib, Scikit-learn).*
  - **Deep Learning Specialization (offered by deeplearning.ai on Coursera)**: Currently pursuing this program with five courses on fundamental Deep Learning algorithms. (*Skills: Python, Tensorflow*).
  - **Machine Learning (taught by Prof. Andrew Ng on Coursera)**: An introductory machine learning course with eight programming projects (*Skills: MATLAB/GNU Octave*).
  - **Other courses**: The Analytics Edge, Intro to R for Data Science, SQL for Data Science, Using Python for Research, CS50: Intro to Computer Science, Intro to Computation and Programming using Python

Experience

- **John Zink Hamworthy Combustion** — Tulsa, OK, USA
  Computational Fluid Dynamics Engineer, R & D Group — *Jun 2013 – Aug 2017*
  - **Simulation and Analysis**: Created CFD models of industrial burners, flares, thermal oxidizers, and vapor recovery systems and analyzed simulation data. Prepared customer reports on findings of these analyses.
  - **Product Development**: Leveraged data from CFD simulations and analyses to provide insights on designing new products and improving existing ones.
  - **Troubleshooting**: Analyzed data from customer sites and ran simulations to troubleshoot on-site product issues.
- **North Carolina State University** — Raleigh, NC, USA
  Graduate Research Assistant, Computational Combustion and Energy Sciences Lab — *Jan 2012 – Jul 2012*
  - **Numerical Simulation and Analysis of Reacting Flows**: Used the Pencil Code, an open-source MPI code written in Fortran, for CFD simulations (on an university HPC cluster) of auto-ignition in hydrogen-air mixtures to study the effects of turbulence intensities and length-scales on flame characteristics for Master's thesis.

Projects

- **Development of CFD codes on MATLAB**: Generated finite-volume solutions for Poissons and Navier-Stokes equations with rectangular and curvilinear meshes.
- **Digit Recognition**: Used multiclass SVM, softmax regression, and deep learning (FCN, CNN) to recognize digits.
- **Automatic Review Analyzer**: Used Perceptron and Pegasos algorithms for sentiment analysis of Amazon reviews.
- **Netflix Movie Ratings**: Used Gaussian mixture models for collaborative filtering to predict movie ratings.
- **Reinforcement Learning**: Taught an agent to play a simple game using parameterized Q-learning.
- **Predicting Office Space Prices**: Multivariate polynomial regression from scratch in Python for predictions.

Technical Skills

- **CFD/CAD Packages**: Star-CCM+, Ansys Fluent, SolidWorks, Ansys DesignModeler
- **Programming and Scripting Languages**: Python, R, MATLAB/GNU Octave, C, Shell, SQL, Fortran
- **Numerical and Plotting Packages**: NumPy, Pandas, SciPy, Matplotlib, Scikit-learn, PyTorch, Tensorflow, ggplot
- **Operating Systems**: GNU/Linux, Windows
- **Version Control**: Git. Used a bit of SVN in the past.
- **High Performance Computing**: Used AWS and company/university clusters to do large parallel computations.