PAVAN KUMAR **KANDAPAGARI**

Sollner str. Munich, Germany
+49 1573 9467478
785pavan@gmail.com
linkedin.com/in/kandapagari
github.com/ kandapagari

SUMMARY

Data Scientist familiar with gathering, cleaning and organizing data for use by technical and non-technical personnel. Advanced understanding of statistical, algebraic and other analytical techniques. Highly organized, motivated and diligent with significant background in Computer Vision and NLP.

EXPERIENCE

Deep Learning Master Thesis – Multi Object Tracking using Deep Learning| Bosch, CR/ACE, Hildesheim

SEPTEMBER 2020 – MARCH 2021

Master thesis on Object tracking under supervision of Prof. Dr.-Ing. Sebastian Stober, OVGU Magdeburg, and Herr Kapelner Tamas (CR/AEC4), Bosch.

- Main objective of the thesis is to build and train a model to track the detected objects across the field of the environment.
- This task is especially challenging for crowded scenes where the objects may interact or have overlapping trajectories.
- DL paradigm used to achieve this is Shared Memory Augmented Neural Networks (SHAMANN) which has the ability to use both temporal and global context information to solve challenging tasks.

Deep Learning Intern | Auvisus GmbH, Karlsruhe

MARCH 2020 – AUGUST 2020

Tasked with redesign of the classification system for vision checkout with deep learning using feature extraction and transfer learning, from scratch using python.

- Implemented with PyTorch and inference with ONNX runtime for speed improvement.
- Trained a mobilenetv2 classifier using food data for transfer learning.
- Created, refined and documented 12 classifier and detector datasets for evaluation of the model.
- Documentation was published using confluence and project progress tracked using Jira.
- Project is maintained using GitLab and for training feature extractor GCP is used.

Teaching Assistant | Otto Von Guericke Universität, Magdeburg

OCTOBER 2019 – JANUARY 2020

Under the supervision of Professor Sandro Schulze, I worked as a teaching assistant working alongside the professor and four other students to take up exercises for the “Introduction to Computer Science for Engineers” course, which introduces Digital Engineering students to the programming and data structures world with Java as the programming language.

- Assisted teachers with classroom management and document coordination to maintain positive learning environment.
- Helped maintain fun, safe, clean and interactive classroom.

- Collaborated with professor on curriculum content and instruction.

Production Engineer | Amara Raja Batteries, India

JULY 2015 – AUGUST 2017

Production shift in-charge of tubular batteries with three teams of 50 people each working in support with one another in three respective shifts.

- Design and deployment of newer technology for production (Acid Circulation System).
- Created engineering documentation, including manufacturing processes, equipment specifications and change notices.
- Decreased in-house production issues by establishing and coordinating sub-contracting and outsourcing requirements and processes.
- Worked with engineering, production and testing departments to implement corrective actions for missed milestones.
- Developed production schedules according to deadlines for existing orders and sales forecasting.

ACADEMIC PROJECTS

DL for Segmentation of Intracranial Vessel Wall Pathologies

OCTOBER 2019 – FEBRUARY 2020

- This medical project done in conjunction with Universität Klinukum, Magdeburg, was to semantically segment the output images from a patient's brain for future detection of aneurysms in the blood vessels.
- As a part of the project, ground truths for all the images in training had to be made, an architecture of Deep learning that suits best for the project in hand was to be chosen, the architecture was to be implemented in python, Jupyter notebook and the model had to be trained with limited images using data augmentation.
- UNET was chosen as the architecture after initial literature review as it seemed the most logical choice

Image Classification with Computer Vision and Deep Learning

NOVEMBER 2019 – JANUARY 2020

- Goal for this project is to solve a non-trivial task of classifying images of flowers with a team of three people.
- First step for the project was to organize data, divide - train, validation and test sets, select the architecture and predict possible hurdles in the progress.
- Data consisted of 8189 images belonging to 102 classes with is very less to begin with for a Deep Network.
- DenseNet by Gao Huang, Zhuang Liu, and Kilian Q. Weinberger was selected as a base model to later condense upon.
- Next part was to implement the net and reduce the complexity due to hardware constrains and reduce overfitting due to less data.
- Then to combat less data issue we used data augmentation and as the final step we fine tune the hyperparameters.

Basic Machine learning Projects

OCTOBER 2018 – JANUARY 2019

- Several projects are done as part of the course, Introduction to Machine Learning in the University, implementing several basic machine learning algorithms starting from linear regression, Naïve bayes, Association learning, reinforcement learning etc.,

- All the projects are done without use of any high-level third-party packages other than the ones that come pre-installed with python 3.+. Data farming is done to begin with followed by feature engineering and training the actual model.
- Visualizing the results was a big part of the project after the training part is finished.

Simulation project for The City of Magdeburg as Chief Software Architect

APRIL 2019 – JUNE 2019

- Responsible for Designing and modelling the project in AnyLogic software, writing code in Java and maintaining all the relevant documentation.
- Several iterations are made after discovering and learning about the flaws in the model and making the next one better than the previous with regular team meetings.
- Then the verification of the project is carried out before handing over for validation by Quality control.
- A certificate of participation was given by the city to appreciate our work with them.

Android Project as a Back-end Java developer

APRIL 2019 – JULY 2019

- Carrying out the Java development part of the project when receiving the XML versions from other teammates as input. Weekly reports are maintained in a blog using Markdown available publicly.
- Starting up with test driven development by writing tests from the specifications and making them pass as we go along so that there are least number of crashes in production.
- Developing checkstyles so that all the teammates follow naming conventions and other code readability checks.

EDUCATION

Master of Science in Digital Engineering | Otto Von Guericke Universität, Magdeburg, Germany

OCT 2018 – PRESENT

Pursuing Digital Engineering with Data Science and Machine learning as main objective and a current grade of 1.8, taking up courses which increase my repertoire with every passing semester.

- Coursework in Machine Learning, Deep Learning and Computer Vision.
- Thesis: Multi object tracking using Deep Learning.

Bachelor of Technology in Mechanical Engineering | JNTU, Ananthapur, India

AUGUST 2011 – APRIL 2015

- GPA: 75%, first class and distinction
- Majored in Mechanical Engineering
- Received a scholarship from Prime Minister's Scholarship Scheme (PMSS)

SKILLS

- Python, Jupyter notebooks
- Java
- Machine Learning
- Pandas
- NumPy
- Matplotlib
- Seaborn
- ONNX Runtime
- SciKit-learn
- TensorFlow
- PyTorch
- Image Processing and computer vision
- Deep Learning – CNN, RNN, Autoencoders.
- OpenCV
- SQL
- Jira, Confluence
- Android app development
- LaTeX – Overleaf
- Slack, MatterMost
- GitLab, GitHub
- Modeling using UML
- Software Testing

- Keras
- AWS
- Google Cloud Platform
- English C1 [IELTS 7.5]
- German A2

COURSES AND CERTIFICATES

- **Chief Software Architect | Simulation project for The City of Magdeburg |** JUNE 2019
- **Deep Learning by Vincent Vanhoucke| classroom.udacity.com |** JUNE 2019
- **Deep Learning with TensorFlow| course.edx.org |** JULY 2019
- **OpenDataScience | mlcourse.ai |** AUG 2019 – NOV 2019
- **Machine Learning Crash Course with TensorFlow APIs| ai.google |** JUNE 2019
- **TensorFlow in Practice Specialization| deeplearning.ai | coursera.org |** NOV 2019
- **Deep Learning Specialization| deeplearning.ai | coursera.org |** DEC 2019

DECLARATION

I do hereby declare that above particulars of information and facts stated are true, correct and complete to the best of my knowledge and belief.

PLACE: Munich

Pavan Kumar Kandapagari

DATE: 03-02-2022