

# Alain Patrick Ndigande

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## Education



<b>Özyeğin Üniversitesi, Masters In Computer Science</b> focusing on Artificial Intelligence, Deep Learning, Computer Vision, Autonomous Driving and Big Data. <b>GPA:4.0/4.0</b>	2022 – present Istanbul, Türkiye
<b>Kocaeli Üniversitesi, B.S. Computer Engineering</b> Bachelor's degree in computer engineering. <b>GPA:3.12/4.0</b>	2017 – 2021 Kocaeli, Türkiye
<b>Kocaeli Üniversitesi Sürekli Eğitim Araştırma ve Uygulama Merkezi (KOUSEM),</b> <i>Turkish language preparatory</i> Turkish language preparatory program.	2016 – 2017 Kocaeli, Türkiye

## Professional Experience

<b>Graduate Research and Teaching Assistant, Özyeğin University</b> - Held the teaching assistant position for over four semesters for four classes: Introduction to Programming, Introduction to deep learning, Computer Vision, and Distributed Systems and Cloud Computing. - Research assistantship for over four semesters - Schedule and maintain regular office hours to meet with students. - Preparing assignment answer sheets. - Evaluate and grade examinations, assignments, or papers and record grades. - Exams Proctoring and required grade-related paperwork.	09/2022 – present Istanbul, Türkiye
<b>Researcher, Scientific and Technological Research Council of Türkiye (TÜBİTAK)</b> - Modeled UAV-taken visible and infrared pairs image registration using CNNs. - Overseeing models implementation, training and evaluation process and necessary data tools. - The method resulted in reduced registration error (ACE, SSIM, MI) and was published in TGRS. - tools (Python, Tensorflow, Pandas, Sckit-Learn, OpenCV, Slurm, Shell, Jupyter Notebooks).	11/2022 – 06/2023 Istanbul, Türkiye
<b>Java Spring Bootcamp, Patika.dev</b> - Java Spring Boot, covering modern practices such as microservices, clean code, unit testing, Apache Kafka, JWT, and Hibernate. - Implemented NTier application with SpringBoot, MongoDB, Docker.	06/2022 – 08/2022 Istanbul, Türkiye
<b>Software Engineer Intern, Kocaeli Üniversitesi</b> - Power consumption-based Side-Channel Analysis using FFN, CNN with ASCAD Dataset. - Analysis of different DL methods to attack AES-128 and AES-256 encryption keys on ATMEGA. - CNN-based implementations improved attack efficiency.	06/2021 – 07/2021 Kocaeli, Türkiye

## Publications

<b>Analysis and Comparison of Dockerized and Standalone Apache Spark Configurations for Efficient Distributed Data Processing</b> ✉ A. P. Ndigande, Ismail Ari, and Sedat Özer. <i>in 2024 Innovations In Intelligent Systems and Applications Conference (ASYU)</i> , Ankara, Türkiye, 2024, pp. 1-5, doi: 10.1109/ASYU62119.2024.10757047	17/10/2024
<b>VisirNet</b> ✉ Özer, Sedat, and Alain P. Ndigande. "VisIRNet: Deep Image Alignment for UAV-Taken Visible and Infrared Image Pairs." <i>IEEE Transactions on Geoscience and Remote Sensing</i> 62 (2024): 1-11.	02/2024

<b>Using different loss functions with YOLACT++ for real-time instance segmentation.</b>  Koles, S., Karakas, S., Ndigande, A. P., & Ozer, S. (2023, July). In 2023 46th International Conference on Telecommunications and Signal Processing (TSP) (pp. 264-267). IEEE.	07/2023
<b>CoSDa</b>  Yılmaz, Gökçe, Recep Tektaş, Mevlüde Sıla Kazan, Alain Patrick Ndigande, and Meltem Kurt Pehlivanoglu. "A Novel Coronavirus Speech Dataset: CoSDa." In 2021 Innovations in Intelligent Systems and Applications Conference (ASYU), pp. 1-4. IEEE, 2021.	10/2021

## Projects

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### Dockerized Apache Spark Performance Analysis.

- Performance analysis of Apache Spark under different configurations on simulated local cluster.
- Tools (Python, Shell, Docker, Jupyter Notebook, PySpark, Vagrant)

### Vision Datasets Statistics

- Comparative analysis of common computer vision datasets for; object detection, segmentation, video instance segmentation and multiple object tracking
- Implemented data loaders and converters for datasets crucial for model training. Python, PyTorch, Shell, OpenCV.

### Machine learning in Finance

- Outlier detection in financial data using isolation forest and other machine learning methods.
- comparative study of portfolio optimization techniques, and autoregressive models (ARIMA, SARIMA).
- Stock price predictions with CNN, LSTM and transformer-based architectures. Python

## Skills

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**Programing Languages** — Python, Java, C++, Javascript.

**Machine Learning** — PyTorch, Tensorflow, Keras, Scikit-Learn, Numpy, Pandas, Seaborn, Hugging Face, Generative AI, Diffusion Models, LLMs, OpenAI, Jupyter Notebook, Slurm, Seaborn, Amazon SageMaker.

**Databases and Analysis** — MySQL, MongoDB, PostgreSQL, RDS, Firebase, Data Visualization (Power Bi), Python, SQL, CSV, Apache Spark, Hadoop, JSON.

**DevOps** — Docker, Kubernetes, Github Actions, Jenkins, Amazon Web Services (AWS), Ansible, Terraform, Python, Shell Scripting, Linux, Git, SonarQube, Nexus

**Cloud Solutions** — Google Cloud, Amazon Web Services; EC2, Security groups, EBS, EFS, IAM, S3, VPC, subnets, Internet gateway, Load Balancers (ALB, NLB), Auto scaling, ECR, EKS, SNS, Route53, golden AMIs, CloudFront, CloudWatch, RDS, Elastic Beanstalk

**Tools** — Git, Azure, Google Cloud, Postman, Rest API, SpringBoot, React, JWT, JUnit, Bash Scripting, Slack.

## Languages

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**English** — Fluent | **Turkish** — C1 certificate | **French** — Intermediate | **Kinyarwanda** — Native

## Awards

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<b>Graduate Research Fellowship, Özyeğin University</b> Awarded to successful students with active research and whose goal is to become researchers or university professors.	06/2023
<b>Graduated with Honors, Kocaeli Üniversitesi</b> Graduated with honors, recognized for outstanding academic performance, and received a certificate of achievement.	11/2021
<b>Türkiye Scholarships Receiver, Türkiye Bursları (tbbs)</b> Awarded a prestigious scholarship for academic excellence for studies in Turkey.	08/2016