Heitor Felix

Recife, Brazil

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Education

Universidade Federal de Pernambuco **Apr 2014 – Jul 2019**
B.Sc. Computer Engineering *Recife, Brazil*

Universidade Federal de Pernambuco **Mar 2020 – Apr 2022**
M.Sc. Computer Science *Recife, Brazil*
Title: OGNet-AD: a method for detecting equipment failures by anomaly detection in images with GAN based on OGNet
CR: 4.0/4.0

Interest

- ML in Production
- MLOps
- Computer Vision
- Machine Learning
- Deep Learning
- GANs
- Cloud Computing
- DevOps

Experience

Voxar Labs **Jan 2023 – Current**
Tech Leader *Recife, Brazil*

- Tech Leader in the In Forma/Isa CTEEP Project – Automatic inspection of power transmission lines
- Technical Leadership of a computer vision dev team
- Application of the end-to-end ML process. Acting from the definition of scope and data to the application of ML models in production
- Applying CI/CD Methods to ML in production on Microsoft Azure

Voxar Labs **Mar 2022 – Dec 2022**
Project Leader *Recife, Brazil*

- Project Lead on HP Project – ScalingML
- Team leadership acting as Product Owner, mediation of communication between client and team, Backlog management, creation and prioritization of User Stories
- Study and application of MLOps Methods for ML in production
- Study and application of CI/CD Methods for ML in production

Voxar Labs **Mar 2020 – Feb 2021**
M.Sc. Student Researcher *Recife, Brazil*

- M.Sc. Student Researcher in the Project for Inspection with Drones by Deep Learning for Automatic Classification of Defects
- Participation in all stages of a Computer Vision with Deep Learning project, from defining the scope of data collection to deploying the models in production
- Publish scientific papers

Voxar Labs **Feb 2019 – Feb 2020**
Undergraduate Student Researcher *Recife, Brazil*

- Internship in the HP project - NonFlatAR
- Research and development of software associated with Computer Vision, Augmented Reality, and Deep Learning with Python, PyTorch, and OpenCV
- Publishing patents

Projects

In Forma/Isa CTEEP – Automatic inspection of power transmission lines | *Microsoft Azure, DL, CV* **2023**

- Inspection of transmission towers by capturing images with drones, and the use of Deep Learning to classify anomalies and defects
- ML experiment tracking with Neptune
- MLOps best practices
- Serve models on Kubernetes with Terraform, Azure, and Seldon Core

HP – ScalingML | *Databricks, Azure Pipelines, AWS, MLflow, Flux CD, Kubernetes, Terraform, Seldon Core* **2022**

- Study and application of MLOps techniques for the development and deployment of ML models in production
- ML experiment tracking with Databricks and MLflow
- Deploying models with Azure Pipelines
- Serving models on Kubernetes with Terraform, AWS, and Seldon Core
- Continuous Delivery with Flux CD

Automatic Classification of Defects in Power Transmission Lines | *PyTorch, AWS, Docker* **2020 - 2021**

- Detection and classification of defects in components of Power Transmission Lines
- ML project steps performed: Scoping; Definition, standardization, and refinement of notes; Selection, training, and evaluation of Machine Learning models; model deployment in the AWS cloud
- One article was published, and another was submitted and awaiting publication

HP - NonFlatAR | *PyTorch, OpenCV* **2019**

- Six degrees of freedom (6DoF) object detection
- Steganography to insert QR Code in images
- Two published patents

Publications

- STN PLAD: A Dataset for Multi-Size Power Line Assets Detection in High-Resolution UAV Images
- Squeezed Deep 6DoF Object Detection using Knowledge Distillation
- Image Processing Techniques to Improve Deep 6DoF Detection in RGB Images
- Patent: Watermarked image signal with varied watermark strengths
- Patent: Neural networks to provide images to recognition engines

Awards

- CNPq M.Sc. Scholarship
- Softex Recife Scholarship
- Reviewer at the Brazilian Symposium on Games and Digital Entertainment 2020 (SBGames)
- Honorable Mention at Embedded Systems Competition 2017, WND IoT Challenge, SBESC

Languages

- Portuguese
- English