

# Eya Cherif

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I am a PhD candidate at Leipzig University. My PhD project is at the interface of remote sensing of vegetation and machine learning. I am particularly interested in exploring Deep Learning techniques using hyperspectral data for vegetation properties estimation.

## Academic education

Since June 2021  
**Leipzig**

**PhD candidate in Physics and Earth sciences, Leipzig University**

Research topic: Deep learning for vegetation parameter retrieval from hyperspectral satellite data

October 2018 – January 2021  
**Passau**

**Master of Science in Computer Science, University of Passau**

Selected modules:

- Data Science Lab: Implementation of Graph Embedding with Self Clustering algorithm using PyTorch.
- Advanced Topics in Data Science, Deep Learning, Visual analytics, Database technologies

September 2016 – January 2021  
**Tunis, Tunisia**

**ICT Engineering, Higher school of Communication of Tunis (SUPCOM)**

Selected projects:

- Blockchain-Prototyp (BitRight) – Sup'Com Entrepreneurial Challenge
- Geolocation Platform mit ArcGIS API: JavaScript, CouchDB
- Android App "MyNotebook": Android Studio

September 2014 – June 2016  
**Tunis, Tunisia**

**Pre-engineering Studies (Mathematics-Physics), University of Tunis El Manar**

Rang: 143 / 2280 (National Engineering School Entrance Exam)

## Practical Experience

Since January 2026  
**Remote**

**IronHack bootcamp: Data science and machine learning**

Selected projects:

- Exploratory data analysis for tree cover loss

June 2021 – December 2025  
**Leipzig**

**Scalable Data Analytics and Artificial Intelligence Center (ScaDS.AI) and Remote Sensing for Earth System Research (RSC4Earth)**

Researcher

- Hyperspectral data preprocessing and dataset compilation: Rasterio, QGIS, Google Earth Engine
- Development and model optimization of deep learning models for vegetation parameter prediction (1D-EfficientNet, 1D-MAE, GAN, AutoEncoder): PyTorch, Keras
- Communication of research results in interdisciplinary Teams and presentations at international conferences (NeurIPS, EGU, LPS, GFÖ, EARSeL)

February 2024 – June 2024  
**Montreal, Canada**

**Mila - Quebec AI Institute and Montreal University (UdeM)**

Research intern

- Gained experience with HPC environments, deep learning frameworks, and model management: Bash, PyTorch, Wandb

May 2020 – December 2020  
**Kranzberg**

**Esri Deutschland GmbH**

Master thesis

Land Use and Land Cover classification:

- Multi-temporal Sentinel-1 and Sentinel-2: ArcGIS Pro, SNAP
- Implementation of Deep Learning architectures (DeepForest, UNet, DeepLab): Keras, Tensorflow

- Integration of LULC-Tools in ArcGIS Pro

November 2019 – May 2020  
Munich

**Quicket GmbH**  
Working student:  
Data acquisition Team

November 2018 – May 2019  
Munich

**Atos Information Technology GmbH**  
Atos IT challenge 2019: 8<sup>th</sup> edition **Machine learning for Sustainability**

- Conception and development of a Chatbot-based recommendation system (Re-use): YOLO, DialogFlow

June 2018 – August 2018  
Tunis, Tunisia

**Standard Sharing Software (3S)**  
Engineering intern

- Development of a smart parking platform (Web + Mobile): MEAN-Stack, NativeScript and gitLab

July 2017 – August 2017  
Tunis, Tunisia

**Tunisie Telecom (TT)**  
Intern

- Trouble shooting + training on high-speed transmission techniques

## Knowledge and skills

### Technical Skills

- **Programming language** Python (Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, Scipy), Bash, MATLAB, C/C++, git
- **Machine Learning** PyTorch, TensorFlow/Keras (Coursera certified), Wandb, Deep-Learning architectures (CNNs, Transformer, GANs, Autoencoders), MLOps and LLMs (Ironhack Start Januar 2026)
- **GIS** QGIS, ArcGIS Pro (Esri-certified), SNAP, Python geospatial libraries (Geopandas, Rasterio)
- **Database** SQL, MongoDB, Neo4j, Firebase
- **Cloud & HPC** Microsoft Azure (Certified: Azure Fundamentals), AWS EC2, Docker, HPC Environments
- **Web & Mobile development** MEAN Stack (MongoDB, Express, Angular, Node.js), Android Studio, NativeScript

### Languages

- Arabic – C2 (Native)
- French – C1
- English – B2
- German – B2

## Scientific Publications

- **Cherif, E.**, Ouaknine, A., Brown, L. A., Dao, P. D., Kovach, K. R., Lu, B., Mederer, D., Feilhauer, H., Kattenborn, T., Rolnick, D. (2025). GreenHyperSpectra: A multi-source hyperspectral dataset for global vegetation trait prediction, In NeurIPS 2025.
- Mederer, D., Feilhauer, H., **Cherif, E.**, Berger, K., Hank, T. B., Kovach, K. R., ... & Kattenborn, T. (2025). Plant trait retrieval from hyperspectral data: Collective efforts in scientific data curation outperform simulated data derived from the PROSAIL model. ISPRS Open Journal of Photogrammetry and Remote Sensing.
- **Cherif, E.**, Feilhauer, H., Berger, K., Dao, P. D., Ewald, M., Hank, T. B., ... & Kattenborn, T. (2023). From Spectra to Plant Functional Traits: Transferable Multi-Trait Models from Heterogeneous and Sparse Data. Remote Sensing of Environment.
- **Cherif, E.**, Hell, M., & Brandmeier, M. (2022). DeepForest: Novel Deep Learning Models for Land Use and Land Cover Classification Using Multi-Temporal and Modal Sentinel Data of the Amazon Basin. Remote Sensing.

## Awards & Scholarships

- Accepted paper at NeurIPS (2025, USA)
- Pitch-presentation – CEOS Workshop on Biodiversity, UN CBD (2024, Canada)
- Mila – Scholarship (2024, Canada)
- Finalist (Top 5) – EARSeL Young Scientist Award, Poster Presentation (2022, Germany)
- DAAD STIBET Scholarship (2019, Germany)
- Finalist – Atos IT Challenge (2019, Germany)

- Erasmus+ Scholarship (2018, Germany)

## Conferences & talks

- Invited Talk – Rolnick Lab, Mila (2025, Remote)
- Invited Talk – Plant Functional Ecology Lab, Université de Montréal (2024, Canada)
- Pitch Talk – CEOS Workshop on Biodiversity, UN CBD (2024, Canada)
- Oral presentation – GFÖ (2023, Germany)
- Oral presentation – EGU (2023, Austria)
- Oral presentation – ELLIS Doctoral Symposium (2022, Spain)
- Poster presentation – EARSeL Workshop (2022, Germany)
- Poster presentation – Living Planet Symposium (2022, Germany)

## Interests and volunteering

### Event Organization

- Organizational assistance at :
  - GFÖ-conference (2023, Germany)
  - “Les Entretiens de l’Excellence”: Entrepreneurial Event (2018, Tunisia)
  - Junior’CPC : Programing Event (2018, Tunisia)
  - Yealy Forum at Sup’Com (2017, Tunisia)

### Arts & Music

- Music Diploma
- Member of international band (2019-2021, University of Passau)
- Chorbeau German-French Choir (since 2022, Leipzig)