Ndilokelwa F. **Luis**

RESEARCH SCIENTIST · AEROSPACE ENGINEERING PhD

Av.José Elias Garcia, 98 - 2Dto, Queluz, 2745-142, Lisbon, Portugal

☐ (+351) 911-148-523 | ✉ ndilokelwa.luis@ndilokelwa.tech | ⌂ www.ndilokelwa.tech | ⬡ ndilokelwa | ⬛ andiluis

"The secret of getting ahead is getting started."

Summary

Curious and mission-driven developer with a PhD in Aerospace Engineering and a strong foundation in advanced mathematics, physics, and software development. After leading development teams and delivering impactful web and mobile solutions, I transitioned in 2024 to focus on AI and Machine Learning. I bring a rigorous academic background, hands-on programming experience (Python, SQL, JavaScript, HTML/CSS), and a deep passion for knowledge sharing and scientific inquiry. My work reflects a commitment to accuracy, innovation, and collaborative learning. Comfortable navigating evolving tools and ambiguous instructions, I thrive in fast-paced, research-driven environments and am eager to contribute to your mission and together understanding the universe through intelligent systems.

Skills

Technical/Engineering	Machine Learning, Mechanical, Aerospace
Programming & Data Analysis	Python, JavaScript, LaTeX, SQL, MatLab, FORTRAN, NumPy, Pandas, Matplotlib, Seaborn
Machine Learning	scikit-learn, SciPy, Statsmodels, XGBoost
Deep Learning	TensorFlow/Keras, PyTorch, HuggingFace
MLOps & Deployment	Flask, Docker, Git|GitHub
Specialized Libraries	Transformers (NLP)
Low-Code	OutSystems
Web Technologies	JavaScript, HTML5, CSS
Languages	English, Portuguese, French, Spanish
Soft-Skills	Communication, Analytic Thinking, Abstract Reasoning, Team Player, Organization

Education

Instituto Superior Técnico (University of Lisbon)
Lisbon, Portugal

PH.D. IN AEROSPACE ENGINEERING — *Sep. 2013 - Nov. 2016*

- Research Grant from FCT, Portugal, 2013-2016.
- Merit Scholarship from INAGBE, Angola, 2013-2016.
- Thesis: Optimal Design of Piezoelectric Sensors and Actuators for the Attenuation of Vibrations in Multilaminated Structures.
- Passed with Distinction with a GPA of 4.0

Instituto Superior Técnico (University of Lisbon)
Lisbon, Portugal

LICENCIATURA (B.Sc. + M.Sc.) IN AEROSPACE ENGINEERING — *Sep. 1997 - Sep. 2004*

- Merit Scholarship from INAGBE, Angola, 2000-2004.
- Thesis: Applied THeoretical Development of a Nano-Engine (90%).
- Finished with a GPA of 3.0

Certification

Stanford University | DeepLearning.AI

MACHINE LEARNING SPECIALIZATION — *Sep. 2025*

- Demonstrated ability to build ML models with NumPy & scikit-learn.
- Demonstrated ability to build & train a neural network with TensorFlow.
- Ability to build recommender systems.
- Understand best practices for ML development.

Python Institute

[PCEP-30-02] PCEP™ – CERTIFIED ENTRY-LEVEL PYTHON PROGRAMMER — *Aug. 2025*

- Demonstrated ability to write an Algorithm.
- Familiarity with Functional and Procedural Programming.
- Ability to apply universal computer programming concepts.

Oracle

ORACLE CLOUD INFRASTRUCTURE 2025 AI FOUNDATIONS ASSOCIATE (1Z0-1122-25)   *Aug. 2025*

- Demonstrated understanding of AI and Machine Learning fundamentals.
- Familiarity with OCI AI services.
- Ability to apply AI/ML concepts within the Oracle Cloud.

DeepLearning.AI

APPLIED STATISTICS FOR DATA ANALYTICS   *May 2025*

- Demosntrated understanding of Probability and Descriptive Statistics.
- Ability to perform Sampling (Statistics), Statistical Hypothesis Testing, Statistical Visualization, and A/B Testing

Experience

Invisible Technologies   *California, USA (Remote)*

STEM EXPERT AI DATA TRAINER   *Aug. 2025 - Present*

- Develop high-quality training examples and solutions in Engineering, Math, Physics, and Chemistry, aligning tasks with expert-level domain knowledge.
- Evaluate and scored model responses for factual accuracy, logical consistency, and clarity; documented reproducible error patterns and recommend improvements to prompt design and evaluation criteria.
- Author and refine task instructions, style guides, and evaluation rubrics to enhance model alignment and training consistency.

NovioQ, B.V.   *Nijmegen, The Netherlands*

SOLUTION ARCHITECT & TEAM LEADER   *Jul. 2023 - Mar. 2024*

- Led a team of 5 OutSystems developers to design and deploy 3 large-scale enterprise solutions for a global agricultural client, focusing on scalability and high performance.
- Directed the team that won the OutSystems 2023 Build for the Future Hackathon, securing 1st place and a $10,000 prize.
- Improved team delivery speed by 30% by introducing agile practices and consistent code review routines.

NovioQ, B.V.   *Nijmegen, The Netherlands*

SENIOR OUTSYSTEMS DEVELOPER   *Sep. 2022 - Jun. 2023*

- Developed and deployed 2 major enterprise-grade systems for a global client, enhancing system performance by over 40%.
- Built automated integrations with SAP, reducing manual data errors by 25%.

Ruption   *Lisbon, Portugal*

OUTSYSTEMS DEVELOPER & JUNIOR TECH LEAD   *Jul. 2021 - Aug. 2022*

- Delivered 7 custom-built applications for clients across various industries within one year.
- Led a small team on selected projects and created technical Proofs of Concept (POCs) that supported two successful sales conversions.

OSQuay   *Isbon, Portugal*

JUNIOR OUTSYSTEMS DEVELOPER   *Sep. 2020 - Jun. 2021*

- Delivered 5 responsive enterprise applications for international clients under tight deadlines.
- Participated in the full software development life-cycle, from requirements gathering to testing and final delivery.

Instituto Superior Técnico (Lisbon University)   *Lisbon, Portugal*

POST-DOC RESEARCHER   *Nov. 2016 - Jul. 2019*

- Built simulation tools using MATLAB and Fortran to analyze vibration reduction in aerospace structures.
- Achieved over 95% model validation accuracy through in-depth simulation and material behavior studies.

Instituto Superior Técnico (Lisbon University)   *Lisbon, Portugal*

RESEARCHER   *Sep. 2004 - Jun. 2013*

- Created models for fluid dynamics analysis of airplanes under critical flight conditions (Energy and Fluids Laboratory - LASEF)
- Devised a multi-disciplinary optimization framework to build novel structures to generate solar and wind energy (Mechanics Laboratory - LEMAC)
- Formulated mathematical models to simulate the behaviour of nano-devices.

Honors & Awards

INTERNATIONAL

2023	**1st Prize,** OutSystems 2023 Build For the Future Hackathon		*Lisbon, Portugal*
2017	**1st Prize,** Optimization of Lisbon Airport Hangar		*Lisbon, Portugal*

DOMESTIC

2003	**1st Prize,** SICRadical Writing Contest		*Lisbon, Portugal*
1995	**1st Prize,** National Physics Olympiad		*Coimbra, Portugal*

Publications

Active vibration attenuation in viscoelastic laminated composite panels using multiobjective optimization

NF Luis, JFA Madeira, AL Araújo, AJM Ferreira

DOI:10.1016/j.compositesb.2017.07.002

Optimal Design of Piezoelectric Sensors and Actuators for the Attenuation of Vibrations in Multilaminated Structures

NF Luis

PhD Thesis

Multiobjective Optimization for active vibration attenuation in laminated composite plates.

NF Luis, JFA Madeira, AL Araújo, AJM Ferreira

Proceedings

Unmanned Power Airship for Airborne Solar Power Generation and Distribution

N Luis, MA Gomes, P Cardoso

DOI:10.2514/6.2011-2149

Publications

Active vibration attenuation in viscoelastic laminated composite panels using multiobjective optimization

NF Luis, JFA Madeira, AL Araújo, AJM Ferreira

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