



TRANSNATIONAL TRAINING

Open Educational Resources (OER) and Open Educational Practices (OEP) with Artificial Intelligence (AI)

Potchefstroom (ZA) – 20-24 October 2025

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Practical Information

Accommodation

Possible hotels or guesthouses close to the meeting venue are:

Name of the hotel: NWU Sportsvillage

Address: [36 Loop St, Noordbrug, Potchefstroom, 2520, South Africa](#)

Telephone number: [+27 18 299 2111](#)

E-mail: sportsvillage@nwu.ac.za

Website: <https://services.nwu.ac.za/sports-village/accommodation>

Type of accommodation provided: Hotel

Name of the guesthouse: Michael-Angelo Guesthouse

Address: [3 Olivier St, Potchefstroom, 2531, South Africa](#)

Telephone number: [+27 82 872 3782](#)

E-mail: info@michael-angelo.co.za

Website: <https://michael-angelo.co.za/>

Type of accommodation provided: Guesthouse (B&B)

Name of the hotel: Willows Garden Hotel

Address: 82 Govan Mbeki Drive, Potchefstroom, South Africa

Telephone number: +27 18 297 6285

E-mail: reservations@willowsgardenhotel.co.za

Website: <https://willowsgardenhotel.com/>

Type of accommodation provided: Hotel

Name of the hotel: Oudrift Riverside Lodge

Address: Thabo Mbeki Drive, Potchefstroom, South Africa

Telephone number: [+27 18 297 4939](#)



Project Number: Ted-SOEP - 101179402

E-mail:

Website: <https://www.oudrift.co.za/>

Type of accommodation provided: Guesthouse (B&B)

Name of the hotel: Ma Cachette

Address: 11 Meyer Street, Potchefstroom, South Africa

Telephone number: +27 18 297 6980

E-mail: maca4297@gmail.com

Website: <https://www.macachette.co.za/>

Type of accommodation provided: Guesthouse (B&B)

Name of the hotel: Feather Hill Boutique Hotel

Address: 1133 Dagbreek Landgoed Uitbreiding, Potchefstroom, South Africa

Telephone number: +27(0)66 429 9996

E-mail: reservations@thefeatherhill.co.za

Website: <https://thefeatherhill.co.za/>

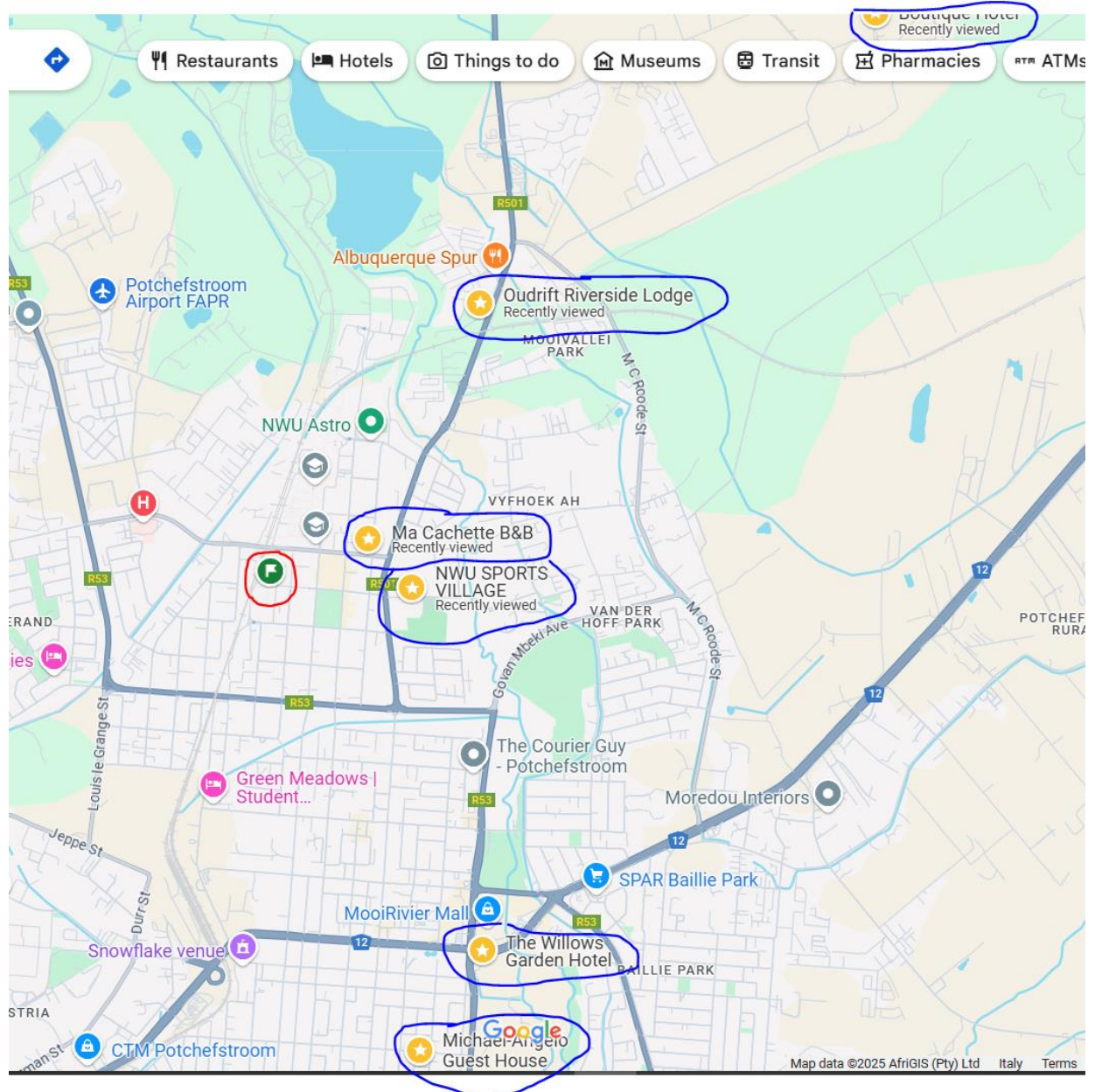
Type of accommodation provided: Boutique Hotel



**Co-funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither

Map of the venue and accommodation options



The training venue will be at the NWU Campus – circled in red. The accommodation options are circled in blue.

Arriving in Potchefstroom

OR Tambo Airport in Johannesburg is the nearest airport to Potchefstroom. There are various shuttle services that can be used to travel from the airport to Potchefstroom.

Name of shuttle service: Midway Bus Service

Telephone number: +27 18 290 7877

E-mail: midwaynw@mweb.co.za

Website: <https://www.midwaynw.co.za/>

Name of shuttle service: Citybug Shuttle

Telephone number: +27 861 33 44 33

E-mail: info@citybug.co.za

Website: https://citybug.co.za/or-tambo-international-airport-shuttle-service/?gad_source=1&gad_campaignid=9885320300&gbraid=0AAAAACa4uU2DNPxHQTGKyvMH_EPXXuEWh&gclid=CjwKCAjwvO7CBhAqEiwA9q2YJXiGUsQJ2HMX8hjgljoKkTm21HKFHYXROlaHmIUxMlxl-cCoRJTZSxoCqqcQAvD_BwE

Name of shuttle service: Limetime Shuttle Service

Telephone number: +27 87 094 9444

E-mail: bookings@limetimeshuttle.co.za

Website: <https://www.limetimeshuttle.co.za/>

Training Venue Information

The training course will take place at:

Name of the institution: North-West University

Address: 11 Hoffman Street, Potchefstroom, 2520

Telephone number: +27 18 299 1111 / +27 18 299 4585 (Dorothy office) / +27 83 264 3284 (Dorothy Mobile)

E-mail: dorothy.laubscher@nwu.ac.za

Website: <https://www.nwu.ac.za>

Course Programme

Start Date: October 20, 2025, 2:00 PM

End Date: October 24, 2025, 1:00 PM

Day 1	2:00 PM - 4:30 PM
Title of the module	Introduction to OER and OEP with AI in Education
Contents of the module	Objectives: • Present the structure and methodology of the course program. • Introduce the fundamental concepts of Open Educational Resources (OER) and Open Educational Practices (OEP). • Explore innovative methods such as Educational Hackathon, Capture the Flag, and Active Learning. • Present several AI-based digital applications for education in STEM fields. • OER and Copyright • Raise awareness of ethical and legal principles in the use of digital content and tools. Module contents: • Presentation of the course program (objectives, structure, evaluation). • Introductory concepts: ◦ What are OER and OEP? Examples and relevance for education. ◦ Fundamentals of Active Learning. ◦ Introduction to active methodologies: Educational Hackathon and pedagogical “Capture the Flag”. ◦ Presentation of AI tools and applications (e.g., Canva, Google Lens, ChatGPT, Gemini, etc.). ◦ Tool selection: Each group chooses 2 digital apps to use during the session. • Copyright Basics and Ethics in AI Use: ◦ Introduction to open licenses (Creative Commons). ◦ Ethics in the use of AI: algorithmic bias, privacy, and fair attribution.
Name of the trainer/s	Inês Sena

Day 2	10:00 AM - 12:00 AM + 14:00 PM - 16:00 PM
Title of the module	Creating OER for AI-Powered Robotics Hackathon
Contents of the module	Objectives: • Introduce participants to the development of intelligent and autonomous mobile robots. • Explore the integration of Artificial Intelligence (AI) with embedded systems in real-time robotics applications. • Add hands-on experience in programming microcontrollers using C or MicroPython. • Promote teamwork, problem-solving, and innovation in robotics-based competitions. • Simulate real-world robotics challenges that require adaptive behaviour and decision-making. • Digital tools to support students. Module contents:

	• Introduction to the Hackathon • Mobile Robotics Fundamentals ◦ Basics of mobile robot platforms (differential drive, sensors, actuators) ◦ Line following, obstacle avoidance, and navigation strategies • Embedded Systems and Programming ◦ Introduction to microcontrollers used in the challenge ◦ Programming in C and MicroPython: structure, libraries, I/O control ◦ PWM, motor control, and sensor integration • Artificial Intelligence in Robotics ◦ Basic AI concepts for embedded applications ◦ Implementing rule-based and learning-based behaviour ◦ Using sensor data for autonomous decision-making • Integration with real robot ◦ Designing, coding, and testing robot behaviour ◦ Debugging and performance optimisation ◦ Preparing for competition • Final competition ◦ Autonomous task execution by each team's robot ◦ Evaluation based on performance, creativity, and efficiency
Name of the trainer/s	José Lima

Day 3	10:00 AM - 12:00 AM + 14:00 PM - 16:00 PM
Title of the module	Creating OER for Active Learning in STEM
Contents of the module	Objectives: • Promote the conceptual understanding of STEM disciplines, identifying the key points that students need to understand. • Develop critical thinking and creativity in connection with the real world. • Enhance collaboration & communication among participants. • Increase student engagement & motivation in problem-solving. • Use AI tools with ethics and responsible strategies. Module contents: • What is active learning? Benefits, research evidence. • Identification of a key topic to be explored during the session ◦ Explore an AI tool for the key topic selected ◦ Explore problems where the key topic needs to be used ◦ Draft an Education tool for the key topic selected • Peers feedback ◦ How can the educational material be improved? ◦ Improve the educational material. • Reflection tools ◦ What do I like? What should be improved? ◦ Improve the educational material.
Name of the trainer/s	Ana Isabel Pereira

Day 4	10:00 AM - 12:00 AM + 14:00 PM - 16:00 PM
Title of the module	Creating OER for Capture with the flag method of teaching
Contents of the module	

	Objectives: ● Introduction to gamification learning and decision-based pedagogical models. ● Explore gamification in STEM areas. ● Equip the teachers with AI tools for gamification. Module contents: ● Explore simulation-based learning in STEM ○ Identify an interactive roleplay assuming educational roles (e.g., school director, teacher, policymaker) and must make decisions about AI integration based on real-world constraints. ○ Each simulation presents a realistic challenge (e.g., budget allocation, ethical dilemma) and prompts participants to justify choices, with group discussion on the consequences. ○ Identify tools and strategies to support the final strategy. ● Narrative branching missions ○ A "choose-your-path" format, where participants follow a story with branching options (e.g., implementing AI in rural schools, evaluating an AI tutoring system). ○ Each decision leads to different outcomes, encouraging critical thinking about pedagogical, ethical, and practical consequences. ○ Discussions follow to compare different narrative outcomes among groups. ○ Educational material is elaborated to support the previous actions. ● Progress missions with digital badges ○ Participants complete short challenges (e.g., testing a no-code AI tool, identifying algorithmic bias) and earn digital badges for each skill area. ○ Badges represent competencies like "AI Ethics Explorer", "Data-Driven Educator", etc. ○ Unlocking new content or tools requires earning specific badges, promoting personalized learning, and motivation.
Name of the trainer/s	João Mendes

Day 5	10:00 AM - 12:30 AM
Title of the module	Using OEP promoting dissemination and sustainability
Contents of the module	Objectives: ● Present the projects and ideas developed during the week. ● Reflect on the use of digital applications and the active methodologies explored. ● Discuss the applicability of OER, OEP, and AI in education. ● Promote the sharing of experiences, learnings, and next steps for practical implementation. ● Definition of strategies for the increase of the database ● Present MathE as a case study. Module contents: ● Presentation of educational tools and plans created by the groups. ● Discussion on the challenges and benefits of using OER and AI in education. ● Critical evaluation of the methodologies adopted: Hackathon, Capture the Flag, Active Learning, and Gamification. ● Collective reflection on: ○ The impact of the course on the participants' pedagogical practices. ○ Responsible and ethical integration of AI in the classroom.

	○ Plans for replication/training of colleagues at respective institutions. ● Organize a community of practice.
Name of the trainer/s	All the trainers

Trainers Profiles

Name of the trainer	Ana Isabel Pereira	
Subject(s) taught	Active Learning in STEM	
Profile	Coordinator Professor at the Department of Mathematics, Polytechnic Institute of Bragança, and she is vice-coordinator of the Research Centre in Digitalization and Intelligent Robotics (CeDRI) - Polytechnic Institute of Bragança. She is also the Portuguese representative in the European Consortium of Mathematics in Industry. She got her PhD at Minho University (2006) in the 'Numerical Optimization' area. She is the author or co-author of more than two hundred journal papers, book chapters, and conference proceedings. She participates in more than thirty research projects in the areas of robotics, optimization, and innovative teaching tools. Website: Ana Isabel Pereira - CeDRI	

Name of the trainer	Inês Sena	
Subject(s) taught	IA Applications for Teaching	
Profile	She began her academic journey with a degree and a master's in Biomedical Technology, specializing in Medical Signals and Instrumentation, both obtained at the Polytechnic Institute of Bragança (IPB), Portugal. She has been involved in research at IPB since 2020. She has a PhD in Industrial and Systems Engineering and is undertaking a postdoctoral fellowship. Her main research interests include project management, data analysis, machine learning, and developing predictive and prognostic models for safety and well-being. Website: Inês Sena - CeDRI	

Name of the trainer	João Mendes	
Subject(s) taught	Active Learning in Informatics	
Profile	Has a PhD in Engineering and Systems at the University of Minho. He is part of the research team at the Center for Research in Digitization and Intelligent Robotics (CeDRI). He is responsible for the area of data analysis and treatment, algorithms, modeling, optimization, simulation, and artificial intelligence algorithms. He develops software for classifying the various types of olive trees in the region by analyzing their leaves using artificial intelligence algorithms to process and classify them. The main areas of research interest are big data, machine learning, data analysis and treatment, predictive methods, and Industry 4.0. Website: João Mendes - CeDRI	

Name of the trainer	José Lima	
Subject(s) taught	Robotics and Electronics in Hackathon	
Profile	Has a PhD in Electrical and Computer Engineering from the Faculty of Engineering of the University of Porto. He joined the Polytechnic Institute of Bragança in 2002, and currently he is a Coordinator Professor and head of the Electrical Engineering Department of that school. He is also a vice coordinator of the Research Centre in Digitalization and Intelligent Robotics, and a Member of the coordination council of the Centre for Robotics in Industry and Intelligent Systems group of the INESC TEC (Institute for Systems and Computer Engineering of Porto, Portugal). He has published more than 200 papers in international scientific journals and conference proceedings. In addition, he participated in and judged some autonomous mobile robotics competitions and developed industrial applications. Moreover, his research interests are in the field of mobile robotics, simulation, and IoT. He participated as a researcher or PI in some national, FP7, and H2020-funded projects. He supervised more than 60 Master's degree students and is supervising 8 PhD students. Website: José Lima - CeDRI	