

Blended Intensive Program

AI and Cybersecurity: from concept to practice

PARTICIPATING PARTNERS

Coordinator/Receiving HEI:

European University Cyprus
6, Diogenous Street
2404 Engomi, Nicosia, Cyprus
Erasmus Code: CY Nicosia24
Organisation ID: E10208383

Partner/Sending HEIs: SUNRISE partners

OID	Erasmus code	Legal name	Organisation Country
E10208827	F COMPIEG01	UNIVERSITE DE TECHNOLOGIE DE COMPIEGNE	France
E10163553	PL RZESZOW03	WYZSZA SZKOLA INFORMATYKI I ZARZADZANIA Z SIEDZIBA W RZESZOWIE	Poland
E10208984	S VASTERA01	Mälardalens Universitet	Sweden
E10208740	I BOLZANO01	LIBERA UNIVERSITA DI BOLZANO	Italy
E10207876	D ILMENAU01	TECHNISCHE UNIVERSITAET ILMENAU	Germany
E10208852	I ANCONA01	UNIVERSITA POLITECNICA DELLE MARCHE	Italy
E10203394	P VIANA-D01	Instituto Politécnico de Viana do Castelo	Portugal
E10158094	BA MOSTAR01	Univerzitet "Džemal Bijedić" u Mostaru	Bosnia and Herzegovina

BIP KEY INFORMATION

BIP title: AI and Cybersecurity: from concept to practice

BIP Code: 2024-1-CY01-KA131-HED-000210777-1

Type of participants (learners): Students and Staff

Objectives and Description: This dynamic BIP is designed to immerse participants in the evolving world of Artificial Intelligence (AI) and Cybersecurity through a hands-on, team-driven approach. The key objectives are to:

- Build foundational and applied knowledge in Artificial Intelligence and Machine Learning (AI/ML)

- Explore the intersection of AI and cybersecurity through lectures, case studies, and real-world challenges
- Encourage interdisciplinary thinking, innovation, and teamwork
- Empower students to complete a full AI project lifecycle—from data preprocessing to model optimization and presentation
- Foster international collaboration and cross-cultural exchange in a fun, engaging environment

It's a one-week learning adventure that blends theory, practice, innovation, and exploration! It brings together aspiring AI enthusiasts from diverse backgrounds to collaborate on meaningful, real-world projects.

Students will:

- Attend interactive lectures led by experts in AI, ML, Cybersecurity, and Ethics
- Gain hands-on experience building machine learning models with real datasets
- Explore ethical implications of AI and learn how it intertwines with legal frameworks like GDPR
- Take part in an exciting live AI model showcase—where precision meets innovation, and the smartest solutions rise to the top!
- Experience Cyprus through guided cultural and historical excursions in Nicosia, Limassol, and Paphos

The learning doesn't stop at the classroom door—it's infused into every part of the experience.

Number of ECTS: 6

Main teaching/training language: English

INFORMATION FOR ONLINE LEARNING AGREEMENT (OLA)

Planned Period: 14/07/2025-18/07/2025

Field of education: 0610: Information & Communication Technologies

Level of study: First cycle/Bachelor's or equivalent (EQF-6)

Physical Activity- Start date: 14/07/2025 **End date:** 18/07/2025

Virtual Activity: before and/or after the physical activity, to be confirmed.

Receiving Institution Info

Name: European University Cyprus

Country: Cyprus

Address: 6 Diogenes Street, Engomi, 2404 Nicosia, Cyprus

Contact Person: Mrs. Efi Michael, e.michael@euc.ac.cy

Responsible Person: Dr. Andreas Stylianou, an.stylianou@euc.ac.cy

PRELIMINARY PROGRAM OF THE BIP WEEK

Monday 14/07/2025:

09:00 - 12:05: Meet faculty and students and visit the campus

12:15 - 13:00: Lecture (Dr. Anastasia Ioannou): Fundamentals of AI and ML: What is Artificial Intelligence and Machine Learning, Types of Machine Learning (supervised, unsupervised), how

machines learn (data collection, preprocessing, model selection, training and validation, evaluation, metrics i.e., Accuracy, Precision, Recall, F1 score), application of AI/ML.

13:00 - 14:00: Lunch break

14:00 - 15:40: Lecture at Microsoft Innovation Center (Dr. Yianna Danidou): Introduction to AI and Cybersecurity Challenges

15:50 – onwards: Free study time

Tuesday 15/07/2025:

09:00 - 13:00: Group Project (Dr. Anastasia Ioannou): Brainstorming / Project Planning / Project Discussions: A detailed discussion of the project that needs to be submitted by the end of the week. Separation of students into teams. Each team will plan their project, the objectives and the requirements, what tasks will be distributed in each team member, what solutions are going to be provided, etc.

Detailed project description and deliverables:

Students will be provided with a **dataset in .csv format** containing features related to **sensitive websites**. Their task is to **preprocess the data**, train a suitable **machine learning model for text classification**, and **optimize its performance** based on evaluation metrics. The goal is to iteratively improve the model and demonstrate a clear understanding of the full ML pipeline, from data preparation to model refinement.

Each team must also prepare a **presentation** explaining their methodology, challenges faced, and final results. The **final project**, including both the model and the presentation, must be **submitted by July 18th**, ahead of the final presentations.

13:00 - 14:00: Lunch break

14:00 - 16:30: Workshop (Dr. Pericles Cheng): How we predict fire occurrence based on weather data using random forest and other models. Student will implement an AI model and integrate it into a hardware in order to evaluate it (hands-on experience using software and hardware tools).

16:30 - 19:00: Play badminton at the sports center

19:00 – onwards: Free study time

Wednesday 16/07/2025:

09:00 - 11:10: Lecture (Dr. Vicky Papadopoulou Lesta): An introduction to intelligent multi-agent systems and Game theory: Fundamentals of multi-agent systems (MAS), focusing on cooperation, competition, and coordination among agents. Introduction of key concepts from game theory, such as strategies, payoffs, Nash equilibrium, and how rational agents make decisions when others are involved.

11:20-12:05: Lecture/Seminar: Applications of AI in Cybersecurity , Case Studies in AI-Powered Cyber Defense

12:15 - 13:00: Lecture (Dr. Costas Iordanou): How to identify sensitive websites based on GDPR using AI. A step by step explanation and demonstration on how to identify sensitive websites based on GDPR using AI, i.e., how the data is collected and pre-processed, how the model is trained and validated, how to extract features and fine tune parameters, how to evaluate the model.

13:00 - 14:00: Lunch break

14:00 - 19:00: Tour to Nicosia with a professional tour guide. Visit to the Cyprus Archaeological Museum

19:00 – onwards: Free study time

Thursday 17/07/2025:

09:00 – 13:00: **Workshop (Dr. Anastasia Ioannou):** Hands -on experience using ML models. Students will work in teams to develop their AI projects, which will be delivered and presented on the final day of the program. Throughout the sessions, teams will receive ongoing guidance and feedback to help them refine and improve their models. The focus will be on collaboration, innovation, and practical application of AI concepts.

13:00 - 14:00: Lunch break

14:00 - 14:45: Lecture/Seminar: Ethics in AI and Cybersecurity

14:45 - 17:00: Game time (Dr. Anastasia Ioannou): Project competition AI. Each team will present a live demonstration of their current AI model in action. Models will be evaluated based on accuracy and performance. The team with the highest accuracy will be declared the winner of the competition! Let the best model win!

17:00 – onwards: Free study time

Friday 18/07/2025:

09:00 - 10:15: Project presentation preparation (Dr. Anastasia Ioannou): Students will finalize their projects and prepare their presentations for the final showcase. This includes refining their slides, practicing delivery, and ensuring their AI models are ready for demonstration.

10:25 - 13:00: Team presentations and feedback (Dr. Anastasia Ioannou): There will be a hybrid session accessible to all participants, where each team will present their AI project, showcasing their model, methodology, and results. Presentations will be followed by constructive feedback from instructors and peers, focusing on the strengths of the approach and areas for improvement. This session encourages critical thinking, communication skills, and collaborative learning.

13:00 - 14:00: Lunch break

14:00 - 16:30: Award graduation certificates / Group photo session / Souvenir distribution: To celebrate the successful completion of the program, students will be awarded their graduation certificates in a brief ceremony. This will be followed by a group photo session to capture the moment and the distribution of souvenirs as a token of appreciation. A fitting end to a journey of learning, collaboration, and innovation!

16:30 – 18:00: Nicosia Night Tour

18:00 – onwards: Dinner (Nicosia Night out)

Optional: you are warmly invited to join the optional 'Heritage Day'.

Saturday 19/07/2025:

08:00 – all day:

- Humanities and natural landscape tour in Limassol/Limassol/Paphos: Explore historical sites and museums
- Lunch, Dinner: Experience the local characteristic food culture

PRE-SCHOOL LEARNING PACKAGE

To help you get the most out of this program, we've prepared a **Pre-School Learning Package** that includes essential readings and hands-on materials.

Please take some time to go through these materials before the start of the program. They'll help you follow the lectures, collaborate effectively, and dive into the project work with confidence.

Note: These materials are suggestions only. You are encouraged to explore any other relevant sources (videos, tutorials, articles, or books) that align with your learning preferences and background. The goal is to ensure you're familiar with the core topics that will be explored during the program.

Pre-School Learning Package

Students should ideally have:

1. **Basic Python Programming Skills**
2. **Introductory Understanding of Machine Learning Concepts**
3. **Basic Data Handling & Preprocessing**
4. **Familiarity with Supervised Learning**
5. **Awareness of Ethical and Legal Issues in AI (e.g., GDPR)**
6. **Basic Understanding of Cybersecurity Concepts**

Preparatory Materials to Be Sent to Students

1. **Python Programming:** Ensure students are comfortable with basic Python syntax, NumPy, and Pandas.
 - **Interactive Tutorial:** W3Schools Python Tutorial
<https://www.w3schools.com/python/>
 - **Video Course:** Python Full Course for Beginners by Programming with Mosh
<https://www.youtube.com/watch?v=uQrJ0TkZlc>
 - **Interactive Notebook:** Python Crash Course for Machine Learning
<https://thedatafrog.com/en/articles/python-crash-course-machine-learning/>
2. **Machine Learning Basics:** Familiarize students with the ML pipeline, key concepts, and evaluation metrics.
 - **Crash Course:** Google's Machine Learning Crash Course
<https://developers.google.com/machine-learning/crash-course>
 - **Video Series:** StatQuest with Josh Starmer
<https://www.youtube.com/c/joshstarmer>
 - **Lecture Slides:** CS231n: Deep Learning for Computer Vision - Lecture 1
https://cs231n.stanford.edu/slides/2024/lecture_1_part_1.pdf
3. **Working with Data (CSV files, Preprocessing):** Enable students to handle tabular datasets and apply basic cleaning and transformation.
 - **Kaggle Course:** Data Cleaning with Pandas
<https://www.kaggle.com/learn/data-cleaning>
 - **Notebook:** Data Cleaning with Pandas - A to Z
<https://www.kaggle.com/code/saeedjafari/data-cleaning-with-pandas-a-to-z>
4. **Text Classification Overview:** Understand basic Natural Language Processing (NLP) techniques and how they apply to cybersecurity contexts.
 - **Tutorial:** Beginner's Guide to Text Classification with Scikit-Learn
<https://towardsdatascience.com/a-beginners-guide-to-text-classification-with-scikit-learn-63274e3e073a>
5. **Introduction to AI and Cybersecurity:** Understand how AI is transforming cybersecurity; exposure to real-world examples.
 - **Article:** How AI Is Used in Cybersecurity - <https://www.ibm.com/topics/ai-cybersecurity>
 - **Optional Reading:** MITRE ATT&CK Framework Overview - <https://attack.mitre.org/>

6. **GDPR and AI Ethics Primer:** Ensure students grasp the basics of data privacy, consent, and ethical design of AI systems.

- **Fact Sheet:** EU General Data Protection Regulation (GDPR)
https://energy.ec.europa.eu/system/files/2019-03/ey-factsheet-eu-gdpr-2016_0.pdf
- **Article:** What Are AI Ethics? by Built In
<https://builtin.com/artificial-intelligence/ai-ethics>

PRACTICAL INFORMATION about Cyprus

The Receiving Institution: EUC – European University Cyprus, would like to provide the following facilitative information regarding “practicalities” relating to the upcoming Visit in Cyprus.

Venue

All activities will be held at the **European University Cyprus** in Nicosia.

📍 6, Diogenous Str, 2404 Engomi, Nicosia, Cyprus.

<https://g.page/EuropeanUniversityCyprus?share>

☎ +357 22713000 🌐 <https://euc.ac.cy/en/contact-us/>

📶 **Wireless Access:** free wifi to be provided on premises for participants.

(please see also: <https://euc.ac.cy/en/about-us/experience-euc/campus-map/>)

Accommodation

The following Hotels are **suggestions**, and any **contacts and bookings must be made and paid directly by you**.

The main **hotel suggestions** available at walking distance (1-2 kms) from the University are:

Hypnos Boutique Hotel:

<https://goo.gl/maps/cNYM2BRr1yce3Hox7>
booknow@hypnosbh.com

Cleopatra Hotel:

<https://maps.app.goo.gl/QPR4onBSVWQiSNLb8>
info@cleopatra.com.cy

Asty Hotel:

<https://goo.gl/maps/9Z2ocxfM3zauWRqS7>
asty.hotel@cytanet.com.cy

Altius Hotel:

<https://maps.app.goo.gl/vpZsDuqkJ3Gamchh8>
info@altiushotel.com

Hilton:

<https://g.page/HiltonParkNicosia?share>
nicosia.reservations@hilton.com

MAP Hotel:

<https://maps.app.goo.gl/S58dA9qgLXpGgin39>
reservations@maphotel.com.cy

Classic Hotel:

<https://maps.app.goo.gl/TaTFZeK5wkPxvM646>
reclassic@gapgroup.com

Gate22 Boutique Hotel

<https://maps.app.goo.gl/M4axgyE4weCx4gvx6>
info@gate22hotel.com

Airport And Transfers

The **legal points of entry to the Republic of Cyprus** are the **Larnaca International Airport (LCA)** and the **Pafos International Airport (PFO)**.

Please note that as the venue of the Meeting is Nicosia, **it is recommended that participants arrive at Larnaca International Airport** and take a taxi or a bus to their hotels.

More information can be found at the **official website** of the airports: <https://www.hermesairports.com>

***** Please **do not use the airport option in the territories not under the effective control of the Government of the Republic of Cyprus**, as this is not recognized by the Republic of Cyprus and you will probably face problems during “entry” at the Nicosia checkpoints.

Kapnos Airport Shuttle Buses

Shuttle bus services run to/from Larnaca Airport as well as to/from Paphos Airport to Nicosia and other cities. For more information on timetables and destinations: <https://kapnosairportshuttle.com/routes>

Tickets from Larnaca Airport to Nicosia Terminal Station of Kapnos Shuttle cost €9.00 one way. Once at Kapnos Shuttle Terminal in Nicosia, you will need to use different transportation to your hotel (e.g. taxi or bus).

Taxis

Prices depend on the destination. The cost of the journey from Larnaca Airport to Nicosia, should be expected at €50.00 during daytime and at €60.00 during nighttime. Their preference is to be paid in cash. Please proceed on your own to book your taxi, if this is your preferred option.

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THE CITY OF NICOSIA (10.000 year old capital)

Situated in the middle of the island, Nicosia is a busy modern commercial and business centre. The city centre is its old quarter, a jumble of narrow streets with sandstone buildings with overhanging balconies and inner courtyards. The old quarter is surrounded by a sandstone fortress wall with a moat and heart-shaped bastions.

The Cyprus Museum houses the best collection of archaeological artefacts on the island, including a first century AD Roman statuette of Aphrodite of Soli and the original mosaic of Leda and the Swan, while the Leventis Museum depicts the history of the town. St John’s Cathedral, with its frescoes is a marvellous museum of byzantine icons.

In the evening you may stroll in the old city, feel the cool breeze coming from Troodos Mountain and even catch a concert in the moat or an exhibition at the Famagusta Gate, one of the three original entrances into the old city, which has now been restored and is used as a cultural centre.

More about Nicosia and Cyprus at the official website of the Cyprus Tourism Organization: <https://www.visitcyprus.com/index.php/en/>.

GENERAL INFORMATION ABOUT CYPRUS

Languages

Greek and Turkish are the official languages of the Republic of Cyprus. Greek is the main language in the Government-controlled areas of the Republic. English is very widely spoken.

Local Time

Cyprus Time is GMT +2.

Climate & Weather

The island’s climate is an intense Mediterranean climate, with long dry summers from mid–May to mid–October, and mild winters from December to February, which are separated by short autumn and spring

seasons. More at: <https://www.visitcyprus.com/index.php/en/practical-info/climate-weather>. For January-February, you may also look at: <https://www.cyprus-weather.com/article/weather-in-cyprus-in-january.html> and <https://www.cyprus-weather.com/article/weather-in-cyprus-in-february.html>.

Currency and Currency Exchange

The currency of Cyprus is the € - Euro.

All banks operating in Cyprus offer foreign currency exchange services and quote the exchange rates of the Euro against all major foreign currencies daily. Foreign currency can also be exchanged at (some) hotels.

ATMs and Credit Cards

All major banks in Cyprus have automatic teller machines (ATMs) in most towns and in the majority of the large villages. All major credit cards are accepted almost everywhere.

Electricity Supply

The electricity supply in Cyprus is 230 volts, a.c. 50 Hz. Sockets are usually 13 amp, **with 3-point plugs, square pin**. Many hotels provide adaptors upon request from the reception; however it is suggested to come prepared.



Opening Hours

Shops normally open around 09:00 and close around 20:00 Monday to Saturday, with some observing a half-day closure on Wednesday and Saturday afternoons. Shops in tourist areas, large shopping centers and department stores may stay open on weekends and public holidays as well.

Banks are open on workdays (Monday to Friday) usually between 08.30 and 13.30. Banks are closed on weekends and public holidays.

Restaurants and cafes have varying opening hours, but lunch is most often served between 12:00 and 15:00. Dinner is served from 19:00 until late in the evening.

More information at: <https://www.visitcyprus.com/index.php/en/practical-info/time-working-hour-holidays>

Driving




Driving is on the **left-hand side of the road**. All the international road traffic signs are in use and placed on the left-hand side of roads and highways. On roundabouts, priority is given to the right side.

Health-&Safety and Emergencies

Call **112**, the EU-wide emergency number for Police, Fire Service and Ambulance.

Cyprus has an excellent reputation for being a safe and friendly place. Nicosia is also known to be a very friendly and safe city. Of course, discretion and care are always suggested, especially during late hours and in particular in less-crowded downtown areas.

For Emergencies, Hospitals/ Pharmacies: <https://www.visitcyprus.com/index.php/en/practical-info/health-safety>.

Dial Code for Cyprus: +357**Tourist Information – Cyprus Tourism****Organisation:** +357 22691100 fcytour@visitcyprus.com www.visitcyprus.com**Airports Information** <https://www.hermesairports.com/>**Larnaca International Airport (LCA)** +357 24816400 info@hermesairports.com**Pafos International Airport (PFO)** +357 26007002 info@hermesairports.com

For information on the flight schedule and the services provided at both International Airports please call 77778833.