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## FutureMinds Lab Initiative

### TERMS OF REFERENCE 81-23-25

**Title: External Trainer – Vocational Training in Artificial Intelligence: Learning Systems and Data-Driven Intelligence**

**Location: Bosnia and Herzegovina**

**Level of Effort: 5 training days, 5 days of mentoring (spanning across 4-month period) and 2 preparation days**

**Reporting to: Project Manager, FutureMinds Lab Initiative**

**Type of Contract: Short-term Individual Contract**

#### 1. Background

Bosnia and Herzegovina continues to face significant challenges in aligning its workforce with the rapidly growing demands of the digital economy. Studies by the OECD and UNICEF indicate that the country struggles with low levels of digital skills among youth, limited access to modern infrastructure, and a persistent gap between education outputs and labor market needs. This digital gap is particularly evident among youth aged 19-29, who often lack opportunities for structured, market-relevant training that leads directly to employment in high-demand digital sectors.

To address this gap, the FutureMinds Lab Initiative – implemented by the University Sarajevo School of Science and Technology (SSST) within the Private Sector Development Initiative in BiH (EU4PSD), co-funded by the European Union and the German Federal Ministry for Economic Cooperation and Development (BMZ) – was launched with the aim of equipping young people (aged 19-29) with future-oriented digital, green, and entrepreneurial skills through a four-month vocational training program. FutureMinds Lab activities are implemented building upon earlier achievements and the University's participation in the Digital Innovation Hub its4health.

The program focuses on three high-demand specializations: Cloud Computing, Cyber Security and Artificial Intelligence (AI). These fields have been identified as priority areas for Bosnia and Herzegovina's digital transition, offering strong prospects for youth employability both domestically and internationally.

This Call for Proposals relates to the Artificial Intelligence component of the vocational training program, specifically focusing on Learning Systems and Data-Driven Intelligence. Through a combination of conceptual learning and applied exercises, the program introduces participants to the principles of machine learning, emphasizing how systems learn from data and improve performance over time. The component helps youth understand how to select, prepare, and evaluate data for modeling, how to interpret model behavior, and how to connect data-driven systems to measurable business outcomes. By fostering analytical thinking, data literacy, and applied AI reasoning, this training directly contributes to the project's objective of strengthening youth employability and developing a future workforce skilled in data-driven innovation across Bosnia and Herzegovina.



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## 2. Objective

To engage an external Artificial Intelligence trainer with proven expertise in machine learning, data analytics, and applied AI, capable of designing and delivering a structured vocational training and mentoring program on Learning Systems and Data-Driven Intelligence.

## 3. Key responsibilities

- Develop a detailed training curriculum and materials (presentations, slides, exercises, and assignments) covering: principles and types of learning: supervised, unsupervised, reinforcement, and self-supervised learning; data preparation, feature selection, and data quality evaluation; model training, testing, and performance evaluation; concepts of overfitting, generalization, and validation metrics; explainability and interpretability of models (transparency, bias detection, validation); practical examples of data-driven AI applications (predictive maintenance, customer analytics, demand forecasting, risk analysis); design of a conceptual AI learning pipeline for a selected real-world domain.
- Deliver five (5) in-person training sessions in line with the approved curriculum, ensuring interactive, practice-oriented learning.
- Facilitate mentoring sessions to guide participants in designing and assessing simple machine-learning workflows using sample datasets.
- Integrate ethical and responsible AI practices, highlighting data privacy, fairness, and bias mitigation.
- Evaluate participant progress through quizzes, applied assignments, or project reflections.
- Adapt training delivery to participants' varying levels of prior digital and analytical experience.
- Participate in coordination and progress-monitoring meetings with the Project Team.
- Submit a final report (max. 3 pages) summarizing the curriculum delivered, materials developed, participant progress, and recommendations for future improvement.

## 4. Deliverables

- **Training Curriculum – Structured curriculum with defined learning outcomes and training materials /2 days of preparation/** (First payment: 20%)
- **Training Delivery – Facilitation of 5 training days and 5 days of mentoring, total 10 days/** (Second payment: 50%)
- **Final Report – Summary of training delivered and recommendations** (Third payment: 30%)

## 5. Timeline for delivery

| Deliverable                                      | Due Date                   |
|--------------------------------------------------|----------------------------|
| Preparation of Training Curriculum and materials | November 2025              |
| Training Delivery                                | December 2025 - March 2026 |
| Final Report Submission                          | March 15, 2026             |



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## 6. Qualifications

- Minimum 4 years of professional experience in applied AI, machine learning, or data analytics.
- Proven involvement in developing or deploying data-driven solutions within enterprise or academic environments.
- A strong understanding of machine-learning paradigms and lifecycle management (data ingestion, feature engineering, training, evaluation).
- Experience with practical AI/ML tools (e.g., scikit-learn, TensorFlow, PyTorch, or equivalent conceptual frameworks).
- Familiarity with ethical and regulatory frameworks for data use and AI (EU AI Act, ISO/IEC standards, GDPR).
- Demonstrated ability to simplify complex data and modeling concepts into accessible knowledge across interdisciplinary audiences.
- Ability to work with youth (aged 19-29) of mixed skill levels.
- Excellent communication and presentation skills.
- Fluency in the local language; working proficiency in English.

## 7. Application requirements

Applicants must submit:

- CV detailing relevant experience
- Short motivation letter
- Short outline of proposed training approach (one page) including methodology, structure, tools to be used and learning outcomes
- Financial offer (daily fee rate).

## 8. Selection criteria

| Criterion                                                                           | Weight |
|-------------------------------------------------------------------------------------|--------|
| Professional experience in Artificial Intelligence, data science and related fields | 40%    |
| Quality of proposed training approach                                               | 20%    |
| Relevance to target group (youth, entry-level)                                      | 20%    |
| Financial offer                                                                     | 20%    |

## 9. Language of the Assignment

Training will be conducted in the local language, while the final report must be submitted in English.

## 10. Submission Deadline

All interested candidates are to submit their bids with all supporting documents no later than November 23, 2025, 23:59. All bids are to be submitted electronically to the following email address:



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*info@ssst.edu.ba*, with the subject line: *81-23-25 FML External Trainer – Artificial Intelligence: Learning Systems and Data-Driven Intelligence*. Any inquiries regarding the opportunity may be directed to the same address and subject line.



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## Financial Proposal Form – 81-23-25

|                 |                         |       |             |
|-----------------|-------------------------|-------|-------------|
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
|-----------------|-------------------------|-------|-------------|

Bidders are required to prepare their financial proposals following the below format and submit it with the technical offer. Any financial information provided in the technical proposal shall lead to the Bidder's disqualification.

The Financial Proposal should align with the requirements in the Terms of Reference and the Bidder's Technical Proposal.

**Currency of the proposal: BAM**

**Table 1: Summary of Overall Prices**

|                                           | Amount(s) |
|-------------------------------------------|-----------|
| <b>Professional Fees</b> (from Table 2)   |           |
| <b>Other Costs</b> (from Table 3)         |           |
| <b>Total Amount of Financial Proposal</b> |           |

**Table 2: Breakdown of Professional Fees**

| Name                               | Position | Fee Rate<br><i>A</i> | No. of Days/months/ hours<br><i>B</i> | Total Amount<br><i>C=AxB</i> |
|------------------------------------|----------|----------------------|---------------------------------------|------------------------------|
| In-Country                         |          |                      |                                       |                              |
| Home Based                         |          |                      |                                       |                              |
| <b>Subtotal Professional Fees:</b> |          |                      |                                       |                              |

**Table 3: Breakdown of Other Costs**

| Description                   | UOM      | Quantity | Unit Price | Total Amount |
|-------------------------------|----------|----------|------------|--------------|
| Local transportation costs    | Lump Sum |          |            |              |
| Out-of-Pocket Expenses        |          |          |            |              |
| Other Costs: (please specify) |          |          |            |              |
| <b>Subtotal Other Costs:</b>  |          |          |            |              |



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**Table 4: Breakdown of Price per Deliverable/Activity**

| <b>Deliverable/<br/>Activity description</b> | <b>Time<br/>(person days)</b> | <b>Professional Fees</b> | <b>Other Costs</b> | <b>Total</b> |
|----------------------------------------------|-------------------------------|--------------------------|--------------------|--------------|
| Deliverable 1                                |                               |                          |                    |              |
| Deliverable 2                                |                               |                          |                    |              |
| Deliverable 3                                |                               |                          |                    |              |
| .....                                        |                               |                          |                    |              |

**Signature of authorized person:**



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## Inicijativa FutureMinds Lab

### PROJEKTNI ZADATAK 81-23-25

**Naziv pozicije:** Spoljni trener – stručno osposobljavanje iz vještačke inteligencije: Sistemi učenja i inteligencija zasnovana na podacima

**Lokacija:** Bosna i Hercegovina

**Angažman:** 5 dana obuke, 5 dana mentorisanja (u periodu od 4 mjeseca) i 2 dana pripreme

**Izvršavanje:** Projektni menadžer, Inicijativa FutureMinds Lab

**Vrsta ugovora:** Kratkoročni angažman pojedinačnog spoljnog trenera

#### 1. Kontekst

Bosna i Hercegovina se i dalje suočava sa značajnim izazovima u usklađivanju radne snage sa ubrzanim zahtjevima digitalne ekonomije. Prema izvještajima OECD-a i UNICEF-a, mladi u zemlji imaju nizak nivo digitalnih vještina, ograničen pristup savremenoj infrastrukturi i jaz između obrazovnih programa i potreba tržišta rada. Ovaj digitalni jaz posebno je izražen kod mladih uzrasta 19-29 godina, koji često nemaju priliku za strukturirane, tržišno relevantne obuke koje direktno vode do zaposlenja u sektorima s visokom potražnjom.

Kako bi se odgovorilo na ovaj izazov, pokrenuta je FutureMinds Lab inicijativa – koju implementira Univerzitet Sarajevo School of Science and Technology (SSST) u okviru Inicijative za razvoj privatnog sektora u BiH (EU4PSD), sufinansirane od strane Evropske unije i Njemačkog saveznog ministarstva za ekonomsku saradnju i razvoj (BMZ) – s ciljem da se mladim osobama (uzrasta 19 – 29 godina) obezbijede budućnosti orijentisane digitalne, „zelene“ i preduzetničke vještine kroz četveromjesečni program stručne obuke. Aktivnosti FutureMinds Lab-a nadovezuju se na ranije rezultate i učešće Univerziteta u Digitalnom inovacijskom habu its4health.

Program je fokusiran na tri oblasti sa visokom potražnjom: Cloud Computing, Cyber Security i vještačka inteligencija (AI). Ove oblasti su prepoznate kao prioritetne za digitalnu tranziciju Bosne i Hercegovine, sa snažnim potencijalom za zapošljavanje mladih na domaćem i na međunarodnom tržištu.

Ovaj javni poziv odnosi se na komponentu vještačke inteligencije, sa posebnim fokusom na temu Sistemi učenja i inteligencija zasnovana na podacima. Kroz kombinaciju konceptualnog učenja i praktičnih vježbi, program uvodi polaznike u principe mašinskog učenja, naglašavajući kako sistemi uče iz podataka i vremenom poboljšavaju performanse. Komponenta pomaže mladima da razumiju kako izabrati, pripremiti i evaluirati podatke za modeliranje, kako tumačiti ponašanje modela i kako povezati sisteme zasnovane na podacima s mjerljivim poslovnim ishodima. Razvijanjem analitičkog načina razmišljanja, podatkovne pismenosti i razumijevanja primjene AI u stvarnom okruženju, ova obuka direktno doprinosi cilju projekta da ojača zapošljivost mladih i ojača kapacitete buduće radne snage u oblasti inovacija zasnovanih na podacima u Bosni i Hercegovini.



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## 2. Cilj angažmana

Angažovati spoljnog trenera iz vještačke inteligencije, s dokazanim iskustvom u mašinskom učenju, analitici podataka i primjeni AI u praksi, koji je sposoban da osmisli i realizuje strukturiran program stručne obuke i mentorstva na temu Sistemi učenja i inteligencija zasnovana na podacima.

## 3. Ključne odgovornosti

- Razviti detaljan kurikulum obuke i materijale (prezentacije, slideovi, vježbe, zadaci) pokrivajući: principe i vrste učenja: nadzirano, nenadzirano, učenje kroz povratnu informaciju i samostalno učenje; pripremu podataka, odabir karakteristika (feature selection) i procjenu kvaliteta podataka; proces treniranja, testiranja i evaluacije modela; koncepte preučenosti (overfitting), generalizacije i validacijskih metrika; objašnjivost i razumljivost modela (transparentnost, prepoznavanje pristrasnosti, validacija); praktične primjere primjene AI zasnovane na podacima (prediktivno održavanje, analiza kupaca, prognoziranje potražnje, procjena rizika); dizajn konceptualnog „learning pipeline-a“ za odabranu domenu iz stvarnog sektora.
- Održati pet (5) dana obuke uživo u skladu s odobrenim kurikulumom, osiguravajući interaktivno i praktično učenje.
- Voditi mentorske sesije kako bi polaznici dizajnirali i analizirali jednostavne tokove rada (workflow) u mašinskom učenju koristeći primjere skupova podataka.
- Integrisati principe etičke i odgovorne primjene AI, sa fokusom na zaštitu privatnosti podataka, pravičnost i smanjenje pristrasnosti.
- Procijeniti napredak polaznika kroz kvizove, praktične zadatke i kratke projektne refleksije.
- Prilagoditi način rada različitim nivoima digitalnog i analitičkog predznanja polaznika.
- Učestvovati u sastancima za praćenje napretka s projektnim timom.
- Dostaviti završni izvještaj (maks. 3 stranice) sa sažetkom sadržaja realizovanog kurikuluma, napretka polaznika i preporukama.

## 4. Rezultati angažmana (Deliverables)

- **Kurikulum obuke – strukturiran plan obuke sa definisanim ishodima učenja /2 dana pripreme/** (prva uplata – 20%)
- **Realizacija obuke – 5 dana obuke i 5 dana mentorisanja /ukupno 10 dana/** (druga uplata – 50%)
- **Završni izvještaj – sažetak obuke i preporuke** (treća uplata – 30%)

## 5. Vremenski okvir isporuke

**Rezultati angažmana**  
Priprema kurikuluma i materijala  
Realizacija obuke  
Predaja završnog izvještaja

**Rok za isporuku**  
novembar 2025.  
decembar 2025. – mart 2026.  
15. mart 2026.



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## 6. Kvalifikacije

- Minimalno 4 godine profesionalnog iskustva u primjeni vještačke inteligencije, mašinskog učenja ili analitike podataka.
- Dokazano iskustvo u razvoju ili primjeni rješenja zasnovanih na podacima u poslovnom ili akademskom okruženju.
- Odlično razumijevanje paradigmi mašinskog učenja i procesa životnog ciklusa modela (prikupljanje podataka, inženjering karakteristika, treniranje, evaluacija).
- Iskustvo u radu s AI/ML alatima (npr. scikit-learn, TensorFlow, PyTorch ili ekvivalentni alati).
- Poznavanje etičkih i regulatornih okvira za upotrebu podataka i AI (EU AI Act, ISO/IEC standardi, GDPR).
- Dokazana sposobnost da složene tehničke koncepte predstavi jasno i razumljivo interdisciplinarnim grupama polaznika.
- Sposobnost rada sa mladima (19-29) koji imaju različite nivoe znanja.
- Odlične komunikacijske i prezentacijske vještine.
- Tečno poznavanje lokalnog jezika; sposobnost korištenja engleskog jezika u profesionalnom kontekstu.

## 7. Potrebna dokumentacija za prijavu

- CV sa relevantnim iskustvom
- Kratko motivaciono pismo
- Kratki pregled predloženog pristupa obuci (jedna stranica) uključujući metodologiju, strukturu, alate koji će se koristiti i ishode učenja
- Finansijska ponuda (cijena po danu).

## 8. Kriteriji za odabir

| Kriterij                                                                                | Težina |
|-----------------------------------------------------------------------------------------|--------|
| Profesionalno iskustvo u vještačkoj inteligenciji, nauci o podacima i srodnim oblastima | 40%    |
| Kvalitet predloženog pristupa obuci                                                     | 20%    |
| Relevantnost za ciljnu grupu (mladi, početnici)                                         | 20%    |
| Finansijska ponuda                                                                      | 20%    |

## 9. Jezik angažmana

Obuka će se izvoditi na lokalnom jeziku, dok se završni izvještaj predaje na engleskom.

## 10. Rok za prijavu

Svi zainteresirani kandidati dužni su poslati svoje prijave sa pratećom dokumentacijom najkasnije do **23. novembra 2025. godine do 23:59 sati**. Prijave se dostavljaju isključivo elektronskim putem na slijedeću e-mail



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**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

adresu: *info@ssst.edu.ba*, uz napomenu u predmetu e-maila: *81-23-25 FML External Trainer - Artificial Intelligence: Learning Systems and Data-Driven Intelligence*. Pitanja i pojašnjenja u vezi sa pozivom mogu se poslati na istu adresu i uz isti predmet emaila.



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## Forma finansijske ponude – 81-23-25

|              |                |        |               |
|--------------|----------------|--------|---------------|
| Ime ponuđača | [ime ponuđača] | Datum: | Odaberi datum |
|--------------|----------------|--------|---------------|

Ponuđači su obavezni pripremiti svoje finansijske prijedloge prema dole navedenom formatu i dostaviti ih zajedno sa tehničkom ponudom. Svaka finansijska informacija koja bude pružena u tehničkoj ponudi rezultat će diskvalifikacijom ponuđača.

Finansijski prijedlog treba biti usklađen sa zahtjevima iz Projektnog zadatka i tehničkom ponudom ponuđača.

**Valuta ponude: KM**

**Tabela 1: Sažetak ukupnih cijena**

|                                             | Iznos(i) |
|---------------------------------------------|----------|
| <b>Profesionalne naknade (iz Tabele 2)</b>  |          |
| <b>Ostali troškovi (iz Tabele 3)</b>        |          |
| <b>Ukupni iznos finansijskog prijedloga</b> |          |

**Tabela 2: Raspodjela profesionalnih naknada**

| Ime                                    | Pozicija | Tarifa<br><i>A</i> | Broj dana/mjeseci/sati<br><i>B</i> | Ukupni iznos<br>$C=A \times B$ |
|----------------------------------------|----------|--------------------|------------------------------------|--------------------------------|
| U zemlji                               |          |                    |                                    |                                |
| Kod kuće                               |          |                    |                                    |                                |
| <b>Podzbir profesionalnih naknada:</b> |          |                    |                                    |                                |

**Tabela 3: Raspodjela drugih troškova**

| Opis                               | Jedinica mjere | Količina | Jedinična cijena | Ukupni iznos |
|------------------------------------|----------------|----------|------------------|--------------|
| Troškovi lokalnog transporta       | Paušalni iznos |          |                  |              |
| Troškovi "iz džepa"                |                |          |                  |              |
| Ostali troškovi: (molimo navedite) |                |          |                  |              |
| <b>Podzbir drugih troškova:</b>    |                |          |                  |              |



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**Tabela 4: Raspodjela cijene po isporuci/aktivnosti**

| Isporuka/Opis aktivnosti | Vrijeme (osoba/dani) | Profesionalne naknade | Ostali troškovi | Ukupno |
|--------------------------|----------------------|-----------------------|-----------------|--------|
| Isporuka 1               |                      |                       |                 |        |
| Isporuka 2               |                      |                       |                 |        |
| Isporuka 3               |                      |                       |                 |        |
| .....                    |                      |                       |                 |        |

**Potpis ovlaštene osobe:**