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Future Minds Lab Initiative

TERMS OF REFERENCE 81-11-25-2
Repeated call

Title: External Trainer – Vocational Training in Game Graphics Programming
Location: Bosnia and Herzegovina
Level of Effort: 3 training days, 6 days of mentoring (spanning across 6 month-period) and 3 preparation days
Reporting to: Project Manager, Future Minds Lab Initiative
Type of Contract: Short-term Individual Contract

1. Background

Bosnia and Herzegovina faces a critical shortage of skilled professionals in the field of digital technologies. According to the OECD and UNICEF, the country suffers from limited access to digital infrastructure and a mismatch between education outputs and labour market needs. This digital gap is particularly felt among youth aged 19 to 29, who often lack opportunities for structured, market-relevant training that leads to employment and careers in high-demand digital sectors.

In response, the Future Minds Lab Initiative, implemented by the University Sarajevo School of Science and Technology (SSST) under the SEDEP Program and supported by GIZ, aims to provide future-oriented digital, green, and entrepreneurial skills to young people. One of its flagship interventions is a 6-month vocational training program, hosted by the ReWire Institute, SSST's national vocational training institute for the IT sector.
This program focuses on three key specializations: Game Design, Cyber Security, and Cloud Computing. These areas have been identified as high-growth and high-demand in both the domestic and regional labour markets. As part of this program, participants will undergo intensive, lab-based and project-oriented training aligned with employer needs.

The Game Design track specifically aims to equip participants with the creative, technical and practical skills necessary to enter the growing gaming and digital media industries – whether through studio employment or independent development. The training is designed to be hands-on and modular, empowering youth to build real-world portfolios and gain confidence through applied learning.

This Call for Proposals relates to the Game Graphics Programming component, dedicated to equips learners with skills for real-time rendering, shader development, and performance optimization. It is a part of the Game Design stream under the Future Minds Lab Initiative and aims to prepare youth for advanced graphics roles using Vulkan and Unreal Engine.

2. Objective

To engage a qualified external trainer with proven experience to deliver hands-on training modules on graphics APIs, shader programming, rendering pipelines, and GPU performance workflows.

3. Key responsibilities

- Develop detailed training content (curriculum, slides, exercises, assignment) on 3D graphics theory, Vulkan architecture, and real-time rendering for 3 modules (3 days per module).
- Introduce participants to SPIR-V shaders, GPU memory models, and debugging via RenderDoc
- Lead sessions using C++ for advanced graphics programming.
- Adapt teaching to the varying skill levels of participants and provide mentoring and guidance during the training.
- Participate in progress monitoring meetings with the Project Team.
- Submit a brief final report summarizing content and curriculum delivered, participants' progress, and recommendations (max 3 pages).

4. Deliverables

- **Training Curriculum – Structured game graphics programming curriculum with learning outcomes /3 days of preparation/** (First payment: 20%)
- **Module Delivery – Facilitation of 3 three-day modules /3 days of training + 6 days of mentoring, total 9 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	September 2025
Module Delivery	October 2025 - March, 2026
Final Report Submission	March 31, 2026

6. Qualifications

- Minimum 3 years of professional experience in real time graphics programming.
- Strong C++ and Vulkan experience.
- Ability to teach low-level graphics architecture.
- Experience with debugging and shader optimization.

- Ability to work with youth with mixed skill levels.
- Excellent communication and presentation skills.
- Fluency in 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 game design	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 September 16, 2025, 23:59. All bids are to be submitted electronically to the following email address: *info@ssst.edu.ba*, with the subject line: *81-11-25-1 FML External Trainer – Game Graphics Programming – Repeated call.* Any inquiries regarding the opportunity may be directed to the same address and subject line.

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Financial Proposal Form – 81-11-25-2

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)
Professional Fees (from Table 2)	
Other Costs (from Table 3)	
Total Amount of Financial Proposal	

Table 2: Breakdown of Professional Fees

Name	**Position**	**Fee Rate** *A*	**No. of Days/months/ hours** *B*	**Total Amount** *C=A+B*
In-Country				
Home Based				
			Subtotal Professional Fees:	

Table 3: Breakdown of Other Costs

Description	**UOM**	**Quantity**	**Unit**	**Total Amount**
Local transportation costs	Lump Sum			
Out-of-Pocket Expenses				
Other Costs: (please specify)				
			Subtotal Other Costs:	

Table 4: Breakdown of Price per Deliverable/Activity

Deliverable/ Activity description	**Time** (person days)	**Professional Fees**	**Other Costs**	**Total**
Deliverable 1				
Deliverable 2				
Deliverable 3				
…..				

Signature of authorized person:

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Inicijativa Future Minds Lab

PROJEKTNI ZADATAK 81-11-25-2
Ponovljeni poziv

Naziv pozicije: Spoljni trener – stručno osposobljavanje iz programiranja grafičkog prikaza u video igrama
Lokacija: Bosna i Hercegovina
Angažman: 3 dana obuke, 6 dana mentorisanja (u period od 6 mjeseci) i 3 dana pripreme
Izvještavanje: Projektni menadžer, Inicijativa Future Minds Lab
Vrsta ugovora: Kratkoročni angažman pojedinačnog spoljnjeg trenera

1. Kontekst

Bosna i Hercegovina se suočava s ozbiljnim nedostatkom kvalifikovanih profesionalaca u oblasti digitalnih tehnologija. Prema OECD-u i UNICEF-u, zemlja ima ograničen pristup digitalnoj infrastrukturi i nesklad između obrazovnih rezultata i potreba tržišta rada. Ovaj digitalni jaz posebno pogađa mlade od 19 do 29 godina, koji često nemaju priliku za strukturirane, tržišno relevantne obuke koje vode ka zapošljavanju u sektorima s visokom potražnjom.

Kao odgovor, Future Minds Lab Initiative, koju implementira Univerzitet SSST u okviru SEDEP programa i uz podršku GIZ-a, ima za cilj da mladima pruži digitalne, zelene i preduzetničke vještine usmjerene ka budućnosti. Jedna od glavnih aktivnosti je šestomjesečni program stručnog osposobljavanja koji vodi ReWire Institute – nacionalni institut SSST-a za IT sektor.

Program je fokusiran na tri ključne specijalizacije: Game Design, Cyber Security i Cloud Computing – oblasti prepoznate kao visoko rastuće i tražene na domaćem i regionalnom tržištu rada. Polaznici prolaze intenzivnu, laboratorijsku i projektno orijentisanu obuku, usklađenu sa potrebama poslodavaca.

Smjer Game Design (dizajn video igara) ima za cilj opremiti polaznike kreativnim, tehničkim i praktičnim vještinama potrebnim za ulazak u industriju igara i digitalnih medija, bilo kroz rad u studiju ili samostalni razvoj. Obuka je praktična i modularna, omogućavajući mladima da izgrade stvarne portfolije i samopouzdanje kroz primijenjeno učenje.

Ovaj poziv za prijavu se odnosi na komponentu programiranja grafičkog prikaza u video igrama, koja polaznicima pruža vještine za renderiranje (*engl. rendering)* u realnom vremenu, razvoj shadera i optimizaciju performansi. To je dio Game Design smjera u okviru Future Minds Lab inicijative i ima za cilj da pripremi mlade za napredne grafičke uloge koristeći Vulkan i Unreal Engine.

2. Cilj angažmana

Angažovati kvalifikovanog vanjskog trenera sa dokazanim iskustvom za izvođenje praktičnih modula obuke iz API-ja za grafiku, programiranja shadera, renderiranja i GPU optimizacije rada grafičkih resursa.

3. Ključne odgovornosti

- Razviti detaljan sadržaj obuke (kurikulum, prezentacije, vježbe, zadatke) iz teorije 3D grafike, Vulkan arhitekture i renderiranja u realnom vremenu, za 3 modula (3 dana po modulu).
- Upoznati polaznike sa SPIR-V shaderima, modelima memorije GPU-a i rješavanju problema putem RenderDoc-a.
- Voditi sesije koristeći C++ za napredno grafičko programiranje.
- Nadzor nad individualnim grafičkim projektima.
- Prilagoditi nastavu različitim nivoima vještina polaznika te pružati mentorstvo i podršku tokom obuke.
- Učestvovati na sastancima za praćenje napretka s projektnim timom.
- Dostaviti kratak završni izvještaj sažimajući sadržaj i plan obuke, napredak polaznika i preporuke (maks. 3 stranice).

4. Rezultati angažmana (Deliverables)

- **Kurikulum obuke – strukturiran plan iz programiranja grafičkog prikaza u video igrama sa definisanim ishodima učenja /3 dana pripreme/** (prva uplata – 20%)
- **Realizacija modula – izvođenje 3 trodnevna modula /ukupno 9 dana/** (druga uplata – 50%)
- **Završni izvještaj – sažetak obuke i preporuke** (treća uplata – 30%)

5. Vremenski okvir isporuke

Rezultati angažmana	Rok za isporuku
Priprema kurikuluma i materijala	septembar 2025.
Realizacija obuke	oktobar 2025. – mart 2026.
Predaja završnog izvještaja	31. mart 2026.

6. Kvalifikacije

- Minimalno 3 godine profesionalnog iskustva u programiranje grafike u realnom vremenu.
- Napredno poznavanje i rad u C++ i Vulkan-u.
- Sposobnost predavanja arhitekture grafike niskog nivoa.
- Iskustvo u debuggiranju i optimizaciji shadera
- Sposobnost rada s mladima različitih nivoa vještina.
- Izvrsne 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 programiranju grafike u realnom vremenu	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 **16. septembra 2025. godine do 23:59 sati.** Prijave se dostavljaju isključivo elektronskim putem na slijedeću e-mail adresu: *info@ssst.edu.ba*, uz napomenu u predmetu e-maila: *81-11-25-1 FML External Trainer – Game Graphics Programming - Ponovljeni poziv*. 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 – 81-11-25-2

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 rezultirat 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)
Profesionalne naknade (iz Tabele 2)	
Ostali troškovi (iz Tabele 3)	
Ukupni iznos finansijskog prijedloga	

Tabela 2: Raspodjela profesionalnih naknada

Ime	**Pozicija**	**Tarifa** *A*	**Broja dana/mjeseci/sati** *B*	**Ukupni iznos** *C=A+B*
U zemlji				
Kod kuće				
			Podzbir profesionalnih naknada:	

Tabela 3: Raspodjela drugih troškova

Opis	**Mjera jedinice**	**Količina**	**Jedinična cijena**	**Ukupni iznos**
Troškovi lokalnog transporta	Paušalni iznos			
Troškovi “iz džepa”				
Ostali troškovi: (molimo navedite)				
			Podzbir drugih troškova:	

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: