Opis raziskovalnega dela *(Research work description)*

1. Članica UL (*UL member)*:

Fakulteta za šport

2. Ime, priimek in elektronski naslov mentorja/ice (*Mentor's name, surname and email*):

Maroje Sorić, Maroje.Soric@fsp.uni-lj.si

3. Raziskovalno področje (*Research field*):

Javno zdravje, umetna inteligenca, znanost o spreminjanju vedenja

4. Opis raziskovalnega dela *(Research work description*):
Vključuje morebitne dodatne pogoje, ki jih mora izpolnjevati kandidat/ka za mladega raziskovalca/ko, ki niso navedeni v razpisu za mlade raziskovalce *(It includes any additional conditions that the candidate for a young researcher must meet, which are not listed in the call to tender for young researchers.)*.

Slov.: Dr. Sorić bo karierni razvoj mladega raziskovalca (v nadaljevanju je zaradi enostavnosti uporabljena moška oblika, čeprav podpiramo popolno enakopravnost žensk v znanosti) izvajal v skladu z akcijskimi smernicami MSCA za mentorstvo. Skladno s tem bo mentor mladega raziskovalca osveščal o raziskovalni integriteti, ga podpiral pri raziskovanju in mu svetoval pri kariernem razvoju, pri čemer bo še posebej pozoren na dobro počutje raziskovalca ter ustrezno ravnotežje med poklicnim in zasebnim življenjem. Mentor bo mlademu raziskovalcu stalno na voljo preko rednih individualnih tedenskih srečanj, rednih srečanj širše raziskovalne skupine SLOfit in po potrebi tudi izven teh rednih terminov. Predvidoma se bo mladi raziskovalec vpisal na doktorski študij Kineziologije na Univerzi v Ljubljani, Fakulteti za šport, doktorsko delo pa bo izdelano v okviru enega od Horizon projektov, znotraj katerega se snujejo digitalna orodja za stratifikacijo prihodnjih zdravstvenih tveganj pri otrocih in mladostnikov ter podpora trajnostni spremembi vedenja v smislu zdravega načina življenja s podporo umetne inteligence. Tovrstni projekti z dokazano odličnostjo na področju javnega zdravja, računalništva in umetne inteligence bodo mlademu raziskovalcu omogočili izkušnje interdisciplinarnega sodelovanja in odlične priložnosti za mreženje. V okviru raziskovalnega dela bo mladi raziskovalec opravil študijske obiske pri nekaterih partnerjih ter tako pridobil posebna znanja, potrebna za izdelavo doktorske disertacije, obdelavo podatkov in razpravo o rezultatih svojega dela in njihovih širših implikacijah. Raziskovalec bo poleg neposrednega dela na doktorskem raziskovanju sodeloval pri številnih dejavnostih skupine SLOfit, ki je izjemno raziskovalno dejavna, močno pa se osredotoča tudi na prevajanje znanosti v prakso in ustvarjanje družbenih sprememb. Dodatno bomo spodbujali mednarodno perspektivo in globalno mreženje z vključitvijo mladega raziskovalca v mrežo NCDRisC, kjer ima pomembno vlogo njegov mentor. V sklopu tega je predviden tudi raziskovalni obisk Imperial College London, kjer se nahaja center NCDRisC. Karierni načrt predvideva pridobitev številnih veščin, pomembnih za nadaljevanje kariere v akademski skupnosti. Specialna znanstvena znanja bodo pridobljena predvsem z učenjem z raziskovanjem, podobno kot se bodo transverzalne spretnosti razvijale z učenjem z delom. Poleg navedenega pa bo mladi raziskovalec pridobil tudi znanja o komunikaciji in diseminaciji raziskovalnih spoznanj, pri čemer bodo posebno vlogo imele izkušnje, ki jih bo raziskovalec pridobil v okviru skupine SLOfit, ki uspešno popularizira znanost in vključuje javnost v razpravo o znanstvenih izsledkih prek več kanalov. Raziskovalec bo imel možnost tudi pridobiti tovrstna znanja na mednarodni ravni. Dodatno bomo raziskovalcu omogočili izobraževanja o generičnih raziskovalnih znanjih (raziskovalna integriteta, statistična obdelava podatkov, upravljanje podatkov, odprta znanost, dimenzija spola),

pisanju in poročanju o znanstvenih projektih ter nekaj transverzalnih veščin (uspešna komunikacija, timsko delo, reševanje konfliktov).
Tema doktorskega naloge kandidata bo oblikovana v okviru raziskovalnih vprašanj Horizon projektov in interesov ter kapacitet kandidata.

Eng.: ***Dr. Sorić*** *will lead the career development of the young researcher in full alignment with the* ***MSCA Guidelines on Supervision****. (Note: For the sake of brevity, the masculine form is used hereafter, though we remain committed to full gender equality in science). Accordingly, the supervisor will cultivate the researcher's awareness of research integrity, provide robust support for their research activities, and offer strategic career guidance—placing a high priority on the researcher's* ***well-being*** *and a healthy* ***work-life balance****. The supervisor will ensure constant availability through weekly one-on-one meetings, regular sessions with the broader* ***SLOfit*** *research group, and ad-hoc consultations as needed.*
The researcher is expected to enroll in the Doctoral Program in ***Kinesiology*** *at the University of Ljubljana's Faculty of Sport. The doctoral thesis will be developed within a* ***Horizon project*** *focused on designing digital tools for stratifying future health risks in children and adolescents, alongside AI-driven support for sustainable healthy lifestyle changes. These projects, recognized for their excellence in public health, computer science, and AI, will offer the researcher invaluable experience in* ***interdisciplinary collaboration*** *and high-level networking. As part of this work, the researcher will undertake study visits to partner institutions to acquire the specialized expertise required for their dissertation, data processing, and the interpretation of results within a broader societal context.*
Beyond their core doctoral research, the candidate will participate in the activities of the ***SLOfit group****, which is distinguished by its research productivity and its emphasis on* ***translating science into practice*** *to drive social change. To further promote an international perspective, the researcher will be integrated into the* ***NCDRisC network****, where their supervisor holds a prominent role. This inclusion features a planned research stay at* ***Imperial College London****, home to the NCDRisC center.*
The career development plan is designed to equip the researcher with a comprehensive toolkit for a successful academic career. Specialized scientific knowledge will be acquired through ***learning-by-research****, while transversal skills will be honed through* ***learning-by-doing****. Furthermore, the researcher will gain expertise in the communication and dissemination of scientific findings, drawing on the SLOfit group's proven success in public engagement and science communication. We will also provide targeted training in* ***generic research competencies*** *(research integrity, statistical analysis, data management, open science, and the gender dimension), scientific writing, and soft skills such as effective communication, teamwork, and conflict resolution.*
The final ***doctoral thesis topic*** *will be defined at the intersection of the Horizon project's research objectives and the candidate's specific interests and capacities.*

5. Priloge, ki jih je treba priložiti ob prijavi *(Documents required to be submitted with the application)*:

☒ **potrdilo o doseženi izobrazbi *(proof of completed education)***

- kandidat z zaključenim magistrskim študijskim programom (2. bolonjska stopnja)
  (candidate who has completed a Master's degree (2nd Bologna level)):
  - diplomska listina / potrdilo o zaključku študijskega programa
    (diploma certificate / certificate of completion of the study programme)
  - priloga k diplomi / potrdilo o opravljenih obveznostih
    (diploma supplement / official transcript of records containing all grades obtained in the study programme)
- kandidat, ki še ni zaključil študija na 2. stopnji
  (candidate who has not yet completed a Master's degree):

- potrdilo o do sedaj opravljenih obveznostih z ocenami magistrskega študijskega programa, s katerim se bo kandidat prijavil na doktorski študij
  (official transcript of records listing all courses and grades obtained so far in the Master's degree programme on the basis of which the candidate will apply for enrollment in a doctoral degree programme.)

☒ **nagrade –** univerzitetna Prešernova nagrada ali Prešernova nagrada članice Univerze v Ljubljani oz. druga enakovredna nagrada *(awards, e.g. Prešeren Prize of the University of Ljubljana, Prešeren Prize of a University of Ljubljana member and/or another equivalent award))*

☒ **bibliografija** *(bibliography)*

☒ **življenjepis** *(CV)*

☒ **motivacijsko pismo** *(motivation letter)*

☒ **opis dosedanjega sodelovanja pri raziskovalnem delu** *(description of the candidate's research work)*

☐ **osnutek idejne zasnove raziskovalnega dela** *(preliminary research proposal)*

☒ **priporočilno pismo** *(letter of recommendation)*

☒ **druge priloge** *(other attachments):*

Opis raziskovalnega dela *(Research work description*)

1. Članica UL (*UL member)*:

Fakulteta za šport

2. Ime, priimek in elektronski naslov mentorja/ice (*Mentor's name, surname and email*):

Prof. Dr. Matej Supej, matej.supej@fsp.uni-lj.si

3. Raziskovalno področje (*Research field*):

5.10. Šport; kineziologija – biomehanski vidik

4. Opis raziskovalnega dela *(Research work description*):
Vključuje morebitne dodatne pogoje, ki jih mora izpolnjevati kandidat/ka za mladega raziskovalca/ko, ki niso navedeni v razpisu za mlade raziskovalce *(It includes any additional conditions that the candidate for a young researcher must meet, which are not listed in the call to tender for young researchers.)*.

Slov.: Mladi raziskovalec bo vključen v raziskovalni program P5-0147 – Kineziologija monostrukturnih, polistrukturnih in konvencionalnih športov, ki združuje vrhunske biomehanske, fiziološke in aplikativne raziskave na področju gibanja, vadbe, športne uspešnosti, zdravja ter preprečevanja poškodb. Program vključuje širok spekter raziskovalnih linij – od razvoja in merjenje veljavnosti novih merilnih tehnologij, njihove aplikacije v specifičnih raziskovalnih in praktičnih okoljih, biomehanske optimizacije tehnike, spremljanja igralne uspešnosti, do proučevanja dejavnikov tveganja za poškodbe ter učinkov vadbe v primarni, sekundarni in terciarni preventivi. Raziskovalno delo mladega raziskovalca bo temeljilo na projektih mentorja povezanih z zgoraj omenjenim programom, v katerih se razvijajo in implementirajo napredne biomehanske in fiziološke tehnologije, med drugim: razvoj pametnih nosljivih sistemov (npr. pametni raztegljivi obliži v okviru projekta Obzorje Evropa – PERSSIMON) za integrativno merjenje biomehanskih in fizioloških parametrov in razvoj sistemov za prepoznavanje in analizo gibanja s pomočjo kamer in umetne inteligence.

Vsebinski poudarki doktorskega raziskovanja
V začetni fazi bo delo usmerjeno predvsem v preverjanje veljavnosti, zanesljivosti in uporabnosti novih merilnih tehnologij, razvoj in standardizacijo merilnih protokolov, primerjave med različnimi merilnimi sistemi.
V nadaljevanju bo poudarek na aplikativni in demonstracijski uporabi novo razvitih tehnologij v realnih okoljih, spremljanju vadbe in gibanja s ciljem po razvoju orodij za izboljšanje športnega dosežka in zmanjšanje tveganja za poškodbe in/ali podpori procesom vračanja po poškodbi in optimizaciji vadbe pri osebah s posebnimi potrebami ali zdravstvenimi stanji.
Raziskovanje bo temeljilo na prepletu biomehanike (kineziologije), podatkovne analitike in elementov umetne inteligence, z jasnim ciljem translacije rezultatov v prakso.

Profil kandidata / kandidatke
Poleg splošnih pogojev, določenih v razpisu za mlade raziskovalce, se pričakuje, da kandidat/ka izpolnjuje naslednje dodatne pogoje oziroma kompetence:

- Razumevanje osnovnih zakonitosti mehanike in/ali biomehanike gibanja,
- interes in pripravljenost za poglobljeno delo z merilnimi sistemi in eksperimentalnimi protokoli,
- osnovno znanje statistike in pripravljenost na obdelavo podatkov (prednost imajo kandidati s predznanjem in/ali željo po delu v programskih okoljih kot je npr. Matlab),
- izrazita afiniteta do športa, gibanja in/ali zdravega življenjskega sloga,
- dobro znanje angleškega jezika (pisno in ustno) z visoka stopnja samoiniciativnosti, analitičnega razmišljanja in sposobnosti timskega dela.

Eng.: The young researcher will participate in the P5-0147 research program – Kinesiology of monostructural, polystructural, and conventional sports, which integrates advanced biomechanical, physiological, and applied research in the areas of movement, exercise, sports performance, health, and injury prevention. The program encompasses a broad spectrum of research topics, including the development and validation of new measurement technologies, their application in both research and practical settings, biomechanical optimisation

of techniques, performance monitoring, as well as the investigation of injury risk factors and the effects of training for primary, secondary, and tertiary prevention.
The work of the young researcher will align with their mentor's projects related to the aforementioned program, focusing on the development and implementation of sophisticated biomechanical and physiological technologies. These include the creation of smart wearable systems (e.g., smart stretchable patches within the Horizon Europe project PERSSIMON) for comprehensive measurement of biomechanical and physiological parameters, as well as systems for motion recognition and analysis utilising cameras and artificial intelligence.

Key aspects of the doctoral research will include:
The initial phase emphasises the validation, reliability, and usability testing of new measurement technologies, along with the development and standardisation of measurement protocols and the comparison of different systems.
Subsequent phases involving the application and demonstration of the developed technologies in real-world environments, with objectives such as monitoring, training and movement to enhance athletic performance, reduce injury risk, support recovery processes, and optimise training for individuals with specific needs or health conditions.
The research will integrate biomechanics (kinesiology), data analytics, and artificial intelligence, with a clear aim to translate findings into practical applications.

Candidate Profile:
In addition to the general requirements specified for young researchers, candidates are expected to possess the following skills and competencies:

- Knowledge of the fundamental principles of mechanics and/or biomechanics of movement.
- Interest and willingness to engage in detailed work with measurement systems and experimental protocols.
- Basic understanding of statistics and a willingness to analyse data (prior experience or interest in programming environments such as Matlab will be considered an advantage).
- Strong interest in sports, movement, and healthy lifestyles.
- Proficiency in English (both written and spoken), coupled with a proactive attitude, analytical thinking, and the ability to work well within a team.

5. Priloge, ki jih je treba priložiti ob prijavi *(Documents required to be submitted with the application)*:

☐ **potrdilo o doseženi izobrazbi *(proof of completed education)***

- kandidat z zaključenim magistrskim študijskim programom (2. bolonjska stopnja)
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