

Opis raziskovalnega dela (Research work description)

1. Članica UL (UL member):

Fakulteta za pomorstvo in promet

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

Marko Perkovič (marko.perkovic@fpp.uni-lj.si)

3. Raziskovalno področje (Research field):

Pomorstvo (vključno s pomorsko navigacijo, ladjedelništvom in pomorskim inženirstvom)

Maritime Studies (including Nautical Science and Naval Architecture and Ocean Engineering)

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.: V okviru programske skupine ARIS »Modeliranje in simulacije v pomorstvu in prometu« (P2-0394) razpisujemo delovno mesto mladega raziskovalca. Raziskovalno delo bo potekalo na interdisciplinarnem področju pomorstva (Maritime Studies) ter bo usmerjeno v razvoj in uporabo naprednih metod modeliranja in simulacij za analizo, optimizacijo in izboljšanje varnosti ter učinkovitosti pomorskih sistemov in operacij. Poseben poudarek bo namenjen uvajanju naprednih digitalnih tehnologij in inovativnih pristopov pri načrtovanju plovil, upravljanju pomorskih operacij ter zagotavljanju trajnostnega razvoja pomorskega prometa. Raziskave bodo med drugim obsegale uporabo virtualne resničnosti (VR) in drugih digitalnih tehnologij pri načrtovanju plovil, podpori pri vodenju ladij ter razvoju novih metod usposabljanja.

Del raziskovalnega dela bo namenjen tudi raziskavam na področju biomimetike ter razvoju novih konceptov podvodnih in avtonomnih plovil, vključno z njihovim delovanjem v koordiniranih skupinah (swarm operations). Raziskovalne aktivnosti bodo obsegale tudi analizo pomorskega prometa, modeliranje in ocenjevanje navigacijskih tveganj, analizo verjetnosti trčenj in drugih pomorskih nesreč ter ocenjevanje okoljskih posledic morebitnih razlitij nafte ali drugih nevarnih snovi v morskem okolju.

Raziskave bodo lahko vključevale uporabo naprednih simulacijskih modelov, analizo podatkov o pomorskem prometu (npr. AIS) ter razvoj metod za podporo odločanju na področju pomorske varnosti ter obalnega in pomorskega inženirstva (coastal and ocean engineering).

Naloge in odgovornosti so

- vpis na doktorski študij ter uspešno opravljanje obveznosti doktorskega študija;
- sodelovanje pri raziskovalnih projektih programske skupine;
- razvoj in uporaba modelov ter simulacijskih orodij za analizo pomorskih sistemov in operacij;
- sodelovanje pri razvoju inovativnih rešitev na področju pomorske varnosti, navigacije in pomorskih tehnologij;
- objava znanstvenih člankov v mednarodnih znanstvenih revijah;
- aktivno sodelovanje na domačih in mednarodnih znanstvenih konferencah in delavnicah.

Prednost pri izbiri bodo imeli kandidati, ki

- so zaključili magistrski študij s področja pomorstva, prometa, ladjedelništva, strojništva, gradbeništva ali druge tehnične smeri;
- so dosegli nadpovprečen uspeh na magistrskem študiju oziroma pri izdelavi magistrskega dela;
- izkazujejo dosedanje raziskovalne izkušnje (npr. sodelovanje pri raziskovalnih projektih, objave ali sodelovanje na konferencah);
- izkazujejo interes za raziskave na področju pomorske varnosti, pomorskih tehnologij ali modeliranja pomorskih sistemov;
- izkazujejo znanje programiranja, analize podatkov ali uporabe simulacijskih orodij;
- izkazujejo odlične analitične in komunikacijske spretnosti;• aktivno obvladajo angleški jezik.

Ponujamo

- zaposlitev za določen čas v skladu s pravili financiranja mladih raziskovalcev;
- sodelovanje v nacionalnih in mednarodnih raziskovalnih projektih;
- možnost objavljanja v uglednih mednarodnih znanstvenih revijah;
- aktivno vključevanje v mednarodno raziskovalno skupnost.

Eng.: Within the ARIS research programme group “Modelling and Simulation in Maritime and Transport Systems” (P2-0394), a position for a young researcher is open. The research work will be conducted within the interdisciplinary field of Maritime Studies and will focus on the development and application of advanced modelling and simulation methods for the analysis, optimisation, and improvement of safety and efficiency of maritime systems and operations.

Special emphasis will be placed on the introduction of advanced digital technologies and innovative approaches in ship design, maritime operations, and the sustainable development of maritime transport. Research activities will include the use of virtual reality (VR) and other digital technologies for ship design, decision-support in ship handling, and the development of advanced training methods.

Part of the research will also focus on biomimetics and the development of novel concepts of underwater and autonomous vessels, including their coordinated operation in swarm systems. The research activities will also include maritime traffic analysis, modelling and assessment of navigational risks, analysis of collision probabilities and other maritime accidents, as well as the assessment of environmental consequences of potential oil or hazardous substance spills in the marine environment.

The research may involve the use of advanced simulation models, analysis of maritime traffic data (e.g., AIS), and the development of decision-support methods related to maritime safety and coastal and ocean engineering.

Duties and Responsibilities

- enrolment in a doctoral study programme and successful fulfilment of doctoral study obligations;
- participation in research projects of the programme group;
- development and application of modelling and simulation tools for maritime systems and operations analysis;
- participation in the development of innovative solutions in the fields of maritime safety, navigation, and maritime technologies;
- publication of scientific papers in international scientific journals;
- active participation in national and international scientific conferences and workshops.

Preference will be given to candidates who

- hold a Master’s degree in maritime studies, transport, naval architecture, mechanical engineering, civil engineering, or a related technical field;
- achieved above-average academic results in their Master’s studies or Master’s thesis;
- demonstrate previous research experience (e.g., participation in research projects, publications, or conference participation);
- demonstrate interest in research related to maritime safety, maritime technologies, or modelling of maritime systems;
- have knowledge of programming, data analysis, or simulation tools;
- demonstrate strong analytical and communication skills;
- have a good command of English.

We offer

- fixed-term employment in accordance with the funding rules for young researchers;
- participation in national and international research projects;
- opportunities for publishing in reputable international scientific journals;
- active participation in the international research community.

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)*):
 - o diplomska listina / potrdilo o zaključku študijskega programa (*diploma certificate / certificate of completion of the study programme*)
 - o 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*):
 - o 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*):