

Europass Curriculum Vitae

Personal information

Surname(s) / First name(s)	Koprivec, Filip
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Nationality(-ies)	Slovenian
Date of birth	08.09.1995
Gender	Male

Education

Time	2019-ongoing
Title	Faculty of Mathematics and Physics, University of Ljubljana, PhD Degree in Mathematics
Supervisor	doc. dr. Matija Pretnar
Time	2017-2019
Title	Faculty of Mathematics and Physics, University of Ljubljana, Ma in mathematics
Thesis	Explicit effect inference, supervisor: doc. dr. Matija Pretnar
Time	2014-2017
Title	Faculty of Mathematics and Physics, University of Ljubljana, Ba in mathematics
Thesis	Using types to provide safety in programming languages, supervisor: doc. dr. Matija Pretnar
Time	2010-2014
Title	Gimnazija Vič

Formal working experience

Time	October 2020 - ongoing
Employer	Institute of Mathematics, Physics, and Mechanics
Job description	Young researcher as part of my doctoral studies
Job duties	Continuing on my masters work with supervisor Matija Pretnar, I mostly work on algebraic effects and their handlers focusing on eff and probabilistic programming.
Time	October 2020 - ongoing
Employer	Faculty of Mathematics and Physics, University of Ljubljana
Job description	Teaching for programming/CS courses
Job duties	Exercises classes preparation, exam preparation and grading. Topics include: Python, Ocaml, basic dynamic programming and data analysis
Time	October 2018 - ongoing
Employer	Faculty of Computer and Information Science
Job description	Organization of preparation and selection for Slovenian IOI and CEOI team
Job duties	As part of team preparation and selection process I prepared two lectures on graph algorithms and provided help with the selection competition assignments.

Time	June - September 2018
Employer	Kovina Trade d.o.o.
Job description	Design and develop a platform for inventory tracking
Job duties	Designed and implemented simple platform for inventory tracking combined with corresponding Android application for on-site inventory updates with custom QR codes.
Time	February 2018 - ongoing
Employer	Jozef Stefan Institute, Artificial Intelligence Laboratory
Job description	Student research help on multiple Horizon 2020 projects. Focus of the project was mostly the fusion of big data with additional sensor information and efficient processing of multiple sources. Main project was concerned with analysis of satellite imagery which produce a few TB of data per day.
Job duties	Data preparation and data analysis, development, implementation and optimization of new machine learning methods. Final data analysis and model interpretation. My work mostly focused on exploratory data research, preparation of pipeline for large scale data mining and optimization of existing machine learning methods. As part of the work, I visited multiple conferences, prepared internal workshops about ML methods and genetic algorithms and published a few conference contributions. I visited multiple international conferences (KDD 2018, KDD 2019, Big Data From Space 2018)
and presented my findings on SiKDD conference.	
Time	October 2017 - September 2019
Employer	Faculty of Mathematics and Physics, University of Ljubljana
Job description	As a student teaching assistant, I taught introductory computer lab classes to mathematics (\LaTeX , Mathematics, MS Word, MS Excel, basic HTML and CSS
and physics students (introduction to C programming language). Job duties	Partial lab classes preparation, preparation and grading of midterms and final exams.
Time	2017 - ongoing
Employer	DMFA
Job description	As part of evaluation committee for yearly high school mathematics competitions, I take part in evaluation and grading of the assignments.
Time	2016 - 2018
Employer	Zavod 404
Job description	Development of autonomous system for detection and characterization of different defects on mechanical water pumps using sound/vibration analysis.
Job duties	Experiment planning and preparations, statistical and spectral analysis of the acquired data, preparation of final product with automatic detection and classification of defects.
Time	December 2015 - ongoing
Employer	SNIT d.o.o
Job description	As Smartninja instructor, I lead Web Development course (html, bootstrap, python, google app engine), a basic ChatBot course and basic database course.
Time	June-September 2015
Employer	iHelp d.o.o.
Job description	I renovated and updated the http://www.ihelp-family.com/ and added some new functionality (among others: language selection, input form changes, translations).
Time	June-September 2014
Employer	Termitnjak d.o.o.

Job description

I helped with the renovation of company's homepage.

**Informal working
experience/various
projects**

Time
Project
Description

Februray 2018 - ongoing

RTK program committee

As part of program committee for high school and university level ACM programming competition (CERC, CEOI...) I help with assignment preparation and competitions.

Time
Project
Description

February 2017

Mypy Tutorial/Workshop

As part of CS related workshops, I organized a small tutorial/workshop for students and staff, that presented mypy (optional static typing for python) and its usages/advantages, while also presenting some other hidden python features. (Official description in slovene, material)

Time
Project
Description

2016-

Projekt Tomo

Projekt Tomo is web service used on faculty and on some outside courses to teach programming. As part of my diploma thesis (undergraduate thesis), I am working on adding new reporting, statistic and analysis functionalities for instructors to existing project. Directly correlated with my thesis is adding mypy and optional static typing, along with unittests, to existing codebase with aim of easing development and reducing the bug count.

Time
Project
Description

2012-2015

Calypso

As leader of AI team, I participated in project Calypso, where we made partially autonomous system for simple research submarine, took care for sensor reading and developed controlling system.

Time
Project
Description

2012/2013

Zeolites and Thermal Energy Storage

In cooperation with Alenka Ristić from National Institute of Chemistry and high school professor Alenka Mozer, I (together with classmate) participated in two science fairs (I-SWEEEP and GENIUS Olympiad) and was awarded silver medal on both fairs.

Time
Project
Description

January-March 2014

Rotary gre v Vesolje (Rotary goes to Space)

I took part in Rotary Club Slovenia project, where small probe was launched (with accompanying PR event). I was responsible for tracking system using radio telemetry, heaters and micro controllers. I also developed simple web gui to track probe position in real time.

Time
Project
Description

2014-

Preparing pool system for Vič High school

Every year I prepare server and pool named Zlato kolo for student council evaluation on Gimnazija Vič (my high school).

Time
Project

2014-

Strudl muzik

Description	Project started with friend from high school with goal to ease the control of school radio, but quickly gained popularity among classmates. The service consists of large database listing song locations and metadata from tens of different music providers (folkoteka, mixoteka, muzofon, klav.m3a...) and has grown a lot from start (it currently has around 5-6000000 different entries) and was updated accordingly. Some functionality may be unavailable, as we are currently migrating old sqlite base to new pyramid powered server with elasticsearch for better searching and Angular 2 for better front-end performance.
Time	2011-2012
Project	Vič gre v Vesolje (Vič goes to Space)
Description	Help developed small meteorological probe, where i made my first web site and took part in sensor preparation and subsequent data analysis.
Selected competitions	<ul style="list-style-type: none"> – 3rd place on UPM (national CERC selection) (October 2017), as team leader of team "https://muzik.si" and consequent advance to regional level (CERC), where we placed 39th in the end and got honorable mention. – 1st place among Slovenian team on Google HashCode (59th on world scale) as part of team: "JayZCrew" in 2018. – 4. in 5. on HashCode competition in 2017 and 2019 as part of team "JayZCrew" – 2nd place on UPM (October 2018) as "muzik.si" team leader and subsequent and advancement to CERC in Prague. – Award for the best technology based solution in SporTech Stars competition https://sportech-stars.si/zmagovalni-projekt-2019/ (in Slovene)
Publications	
Type	Conference presentation
Title	Crop classification using PerceptiveSentinel
Conference	SiKDD : zbornik 21. mednarodne multikonference Informacijska družba
Publication date	September 2018
Co-authors	Čerin Matej; Kenda Klemen
Type	Conference presentation
Title	Optimal missing value estimation algorithm for groundwater levels
Conference	The 3rd EWaS International Conference on "Insights on the Water-Energy-Food Nexus"
Publication date	June 2018
Co-authors	Kenda Klemen; Mladenić Dunja
Title	Tipi v programskih jezikih in izreki o varnosti programov
Publication	Obzornik za matematiko in fiziko
Publication date	Oktober 2017
Comment	Article mostly focuses on my diploma thesis
Type	Research report
Title	Zeolites and thermal energy storage
Publication date	2013
Comment	High school research report
Co-authors	Kocijan Vid

Skills and competences

Mother tongue(s)

Native language

Other language(s)

*Self-assessment
European level^(*)*

English

German

Computer competences

Driving license

Slovene

Slovene

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user
A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user

^(*) Common European Framework of Reference (CEF) level

I program mostly in Python, lately Ocaml (for eff compiler) and Kotlin (previously Java) for Android development. I am otherwise comfortable with other commonly used languages and technologies (Haskell, HTML/CSS/JS, Matlab/Octave, C++, SQL, PHP, Git, Elm).

Driving licese category B