

Petar Maric

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Summary

An avid Open Source Software supporter with a PhD in Applied Computer Science. Particularly fond of Python and Django powered web development. Specializes in rejuvenating brownfield projects, by minimizing the technical debt, introducing new (automated) development/deployment processes, increasing overall code quality, seeding the quality-first development culture, and leading the development team by example. Interested in research or development with a multi-disciplinary team. Passionate about working on state-of-the-art technologies and making cool stuff.

Selected skills

Python, Django, web development, software design, managing/reducing technical debt, metaprogramming, distributed computing, *nix system administration, load testing, web spiders, parsers, scientific computing, numerical analysis, information visualization, LaTeX, Sphinx, Docker, Packer, Vagrant, Celery, HDF5.

Education

Faculty of Technical Sciences, University of Novi Sad

PhD in Electrical and Computer Engineering - Applied Computer Science, 2009 - 2016

GPA: 10.00 out of 10

Thesis: *A hybrid software architecture for supporting the harmonic coupled finite strip method*

Research areas: finite strip method, distributed computing, numerical analysis, metaprogramming

Research projects:

[2011 - 2021] "Computational Mechanics in Structural Engineering", ON174027, Ministry for Science and Technology, Republic of Serbia.

Faculty of Technical Sciences, University of Novi Sad

Master of Electrical and Computer Engineering - Applied Computer Science, 2003 - 2009

GPA: 9.11 out of 10

Thesis: *Django based framework for online opinion research systems*

Experience

Faculty of Technical Sciences, University of Novi Sad

Assistant Professor, December 2016 - Present

Teaching Assistant, October 2009 - December 2016

Responsible for teaching Programming languages and data structures, Computer architecture, Compilers and Distributed computing to thousands of future engineers, their evaluation and grading.

Independent Software Consultant

Software Developer, March 2009 - Present

Seasoned Python developer with a strong passion for web, scientific and distributed computing.

Open Source Software

Software Developer, August 2005 - Present

Python Software Foundation contributing member with 40+ Open Source projects created and 27 Python packages published on the Python Package Index.

<https://github.com/petarmaric> and <https://pypi.org/user/petar/>

Created and managing the official country level mirrors for CTAN (Comprehensive TeX Archive Network), Ubuntu, Arch Linux, MariaDB, CentOS, Debian, MX Linux.

Early adopter and contributor to Django.

Portfolio (publicly accessible projects)

DigitalMR LTD (Commercial)

Software Developer/Systems Architect/Enterprise Software Architect, June 2020 - Present

Worked on managing/reducing technical debt, designing - gradually implementing and then enforcing modern development processes (peer review via pull requests, automated tests, CI, CD) while also managing business/developer team resistance to engineering culture changes, seeding the quality-first and test-driven development culture, increasing test code coverage from 0% to 75+% (personally created 2500+ unit tests), documenting and automating development/deployment procedures, upgrading a legacy Django project from 1.11 to 3.2 (in stages), creating automated load tests, designing a new cloud-native software architecture, setting up and helping manage a new geo-distributed remote development team. All of this was done whilst implementing new features in the listening247 platform for a decades-proven global leader in the market research space.

Entered the team as a software developer and have quickly been promoted, all the way to a Enterprise Software Architect - but am still dual-classing between architect/developer roles, and am always leading the development team by example.

<https://www.digital-mr.com/>

pjisp-assignment-template (Open Source)

Project Founder, October 2019 - Present

Created an automated workflow for creating assignments for our ACS students, their deployment and examination.

<https://github.com/petarmaric/pjisp-assignment-template>

acs_examine_student_assignment (Open Source)

Project Founder, October 2019 - Present

Created a Python powered library/console tool for automated assignment examination of our ACS students.

https://github.com/petarmaric/acs_examine_student_assignment

acs_extract_student_assignments (Open Source)

Project Founder, October 2019 - Present

Created a Python powered library/console tool for extracting assignments from exam archives of our ACS students.

https://github.com/petarmaric/acs_extract_student_assignments

version4plos (Open Source)

Project Founder, August 2019 - Present

Created a Python powered library/console tool for automated tracking of PLOS LaTeX template versions.

<https://github.com/petarmaric/version4plos>

template4plos (Open Source)

Project Founder, July 2019 - Present

Created a modified version of the PLOS LaTeX template, preconfigured for automated preparation of your LaTeX paper for submission in PLOS journals.

<https://github.com/petarmaric/template4plos>

latex2plos (Open Source)

Project Founder, July 2019 - Present

Created a Python powered library/console tool for automated preparation of your LaTeX paper for submission in PLOS journals.

<https://github.com/petarmaric/latex2plos>

Official MX Linux mirror (Open Source)

Project Founder, December 2018 - Present

Created and managing the official MX Linux mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://mxlinux.petarmaric.com/>

smoke_test (Open Source)

Project Founder, November 2018 - Present

Created a Python powered library/console tool for automated smoke testing, preconfigured to make coursework easier for our ACS students.

https://github.com/petarmaric/smoke_test

Official Debian mirror (Open Source)

Project Founder, November 2018 - Present

Created and managing the official Debian mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://debian.petarmaric.com/>

Official CentOS mirror (Open Source)

Project Founder, November 2018 - Present

Created and managing the official CentOS mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://centos.petarmaric.com/>

Official MariaDB mirror (Open Source)

Project Founder, August 2018 - Present

Created and managing the official MariaDB mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://mariadb.petarmaric.com/>

fsm_strip_thickness_vibration_analysis (Open Source)

Project Founder, April 2018 - Present

Created a Python powered library/console tool for strip thickness-dependent vibration analysis and visualization of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_thickness_vibration_analysis

fsm_strip_length_vibration_analysis (Open Source)

Project Founder, April 2018 - Present

Created a Python powered library/console tool for strip length-dependent vibration analysis and visualization of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_length_vibration_analysis

fsm_strip_thickness_damage_analysis (Open Source)

Project Founder, April 2018 - Present

Created a Python powered library/console tool for strip thickness-dependent damage analysis and visualization of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_thickness_damage_analysis

fsm_strip_length_damage_analysis (Open Source)

Project Founder, April 2018 - Present

Created a Python powered library/console tool for strip length-dependent damage analysis and visualization of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_length_damage_analysis

fsm_effective_stress (Open Source)

Project Founder, April 2018 - Present

Created a Python powered library that uses the rheological-dynamical analogy (RDA) to compute damage and effective buckling stress in prismatic shell structures.

https://github.com/petarmaric/fsm_effective_stress

fsm_damage_analysis (Open Source)

Project Founder, March 2018 - Present

Created a Python powered library/console tool for damage analysis and visualization of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_damage_analysis

fsm_strip_thickness_analysis (Open Source)

Project Founder, March 2018 - Present

Created a Python powered library/console tool for strip thickness-dependent visualization and modal analysis of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_thickness_analysis

fsm_eigenvalue_experiments (Open Source)

Project Founder, February 2018 - Present

Created a Python powered framework for computing and analyzing experiments, based on the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_eigenvalue_experiments

dynamic_pytables_where_condition (Open Source)

Project Founder, February 2018 - Present

Created a Python powered library that dynamically constructs a PyTables where condition from the supplied keyword arguments.

https://github.com/petarmaric/dynamic_pytables_where_condition

fsm_load_modal_composites (Open Source)

Project Founder, February 2018 - Present

Created a Python powered library that loads modal composites from the file containing the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_load_modal_composites

fsm_strip_length_analysis (Open Source)

Project Founder, February 2018 - Present

Created a Python powered library/console tool for strip length-dependent visualization and modal analysis of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_strip_length_analysis

acs_student_mail_harvester (Open Source)

Project Founder, January 2018 - Present

Created a Python powered library/console tool for harvesting email addresses of our ACS students during their first week of ACS lab coursework.

https://github.com/petarmaric/acs_student_mail_harvester

fsm_modal_analysis (Open Source)

Project Founder, January 2018 - Present

Created a Python powered library/console tool for visualization and modal analysis of the parametric model of buckling and free vibration in prismatic shell structures, as computed by the fsm_eigenvalue project.

https://github.com/petarmaric/fsm_modal_analysis

Official Arch Linux mirror (Open Source)

Project Founder, December 2017 - Present

Created and managing the official Arch Linux mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://arch.petarmaric.com/>

physical_dualism (Open Source)

Project Founder, December 2017 - Present

Created a Python powered library that approximates the natural frequency from stress via physical dualism, and vice versa.

https://github.com/petarmaric/physical_dualism

fsm_eigenvalue (Open Source)

Project Founder, September 2017 - Present

Created a Python powered library/console tool implementing a generalization of eigenvalue problem within the harmonic coupled finite strip method, used for parametric modeling of static and dynamic inelastic buckling, free vibration, damage and failure in prismatic shell structures.

https://github.com/petarmaric/fsm_eigenvalue

MIR (Open Source)

Project Founder, August 2017 - Present

Created the Mesh Intermediary Representation (MIR) specification, an open standard for describing a platform-neutral data format for long-term storage and interchange of mesh-like data. It has also been designed to serve as an intermediary step when converting the mesh-like data between different computational mechanics application formats.

<https://github.com/petarmaric/mir>

acs_student_attendance (Open Source)

Project Founder, December 2016 - Present

Created a Python powered library/console tool for analyzing the lab attendance of our ACS students.

https://github.com/petarmaric/acs_student_attendance

PJISP zbirka zadataka (Open Source)

Project Founder, December 2016 - Present

Created a self-building PJISP course problem book that makes coursework easier for our ACS students.

<https://github.com/petarmaric/pjisp-zbirka-zadataka>

Official Ubuntu Archive mirror (Open Source)

Project Founder, November 2016 - Present

Created and managing the official Ubuntu package archive mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://rs.archive.ubuntu.com/> and <http://ubuntu.mirror.ftn.uns.ac.rs/archive/>

packer-acs-templates (Open Source)

Project Founder, October 2016 - Present

Created an automated Packer based system for building VirtualBox images, which have been preconfigured to make coursework easier for our ACS students.

https://github.com/petarmaric/acs_packer_templates

export_beam_integrals (Open Source)

Project Founder, September 2015 - Present

Created a distributed system for computing and exporting beam integrals of all 6 supported beam types, as defined in the beam_integrals project.

https://github.com/petarmaric/export_beam_integrals

Official Ubuntu CD images mirror (Open Source)

Project Founder, August 2015 - Present

Created and managing the official Ubuntu CD images mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://rs.releases.ubuntu.com/> and <http://ubuntu.mirror.ftn.uns.ac.rs/releases/>

Official CTAN mirror (Open Source)

Project Founder, August 2015 - Present

Created and managing the official CTAN (Comprehensive TeX Archive Network) mirror for Serbia, sponsored by the Faculty of Technical Sciences, University of Novi Sad.

<http://ctan.mirror.ftn.uns.ac.rs/>

simple_plugins (Open Source)

Project Founder, August 2013 - Present

Created a simple to use Python powered plugin framework, inspired by the work of Marty Alchin.

https://github.com/petarmaric/simple_plugins

friendly_name_mixin (Open Source)

Project Founder, August 2013 - Present

Created a Mixin class for extracting friendly names from Python classes.

https://github.com/petarmaric/friendly_name_mixin

nose_extra_tools (Open Source)

Project Founder, August 2013 - Present

Created more testing goodies for 'nose.tools'. Nose extends the test loading and running features of Python 'unittest', making it easier to write, find and run tests.

https://github.com/petarmaric/nose_extra_tools

PJISP zbirka pitanja (Open Source)

Project Founder, November 2012 - Present

Created a self-building PJISP course question book that makes coursework easier for our ACS students.

<https://github.com/petarmaric/pjisp-zbirka-pitanja>

beam_integrals (Open Source)

Project Founder, June 2012 - Present

Created a Python powered library/console tool for determining beam integrals of all 6 supported beam types, as described by prof. D.D. Milašinović in “The Finite Strip Method in Computational Mechanics”.
https://github.com/petarmaric/beam_integrals

telenor_web2sms (Open Source)

Project Founder, October 2011 - September 2012

Created a Python powered library/console tool for sending SMSs through the Telenor WEB2SMS web app.
https://github.com/petarmaric/telenor_web2sms

mdm_compare (Open Source)

Project Founder, February 2011 - Present

Created a Python powered library/console tool for comparing 2 experiment results stored in the MDM file format. MDM is a readable text format suitable for storing and exchanging experiment results, used for years by our university research team and most of our software.
https://github.com/petarmaric/mdm_compare

CitiDexLI, Inc. (Commercial)

Software Developer, January 2010 - December 2016

Worked as a consultant with Prof. Michael Dohan and his team to improve their popular information directory business, started in 1997. As the only developer been adding new functionality and maintaining existing codebase, whilst taking on administrative roles and keeping the client’s cost at minimum. Came to an environment using several different systems spread over multiple codebase and developer generations, with some data duplicated across systems causing occasional inconsistencies. Worked to unify the entire codebase into a centrally managed Django based system.

Introduced resource monitoring with improved alerts/notifications, created reliable backup policies, continue to maintain office, legacy and production servers while systematically improving their security. Planned and worked a new, modern Cloud based infrastructure, aiming to cut the OPEX in half while improving performance and resolving scalability issues.

<http://www.citidex.com/>

Found and reported a Horde/IMP related remote code injection vulnerability in Plesk 8.6 (not credited)
<http://kb.parallels.com/en/113374>

High Score Society (Commercial)

Software Developer, August 2009 - October 2009

Worked as a consultant to improve the Django powered gamer community and prepare it for launch. Updated project code to Django 1.1, fixed bugs, refactored and cleaned up code, implemented new features, integrated the new design, improved scalability by moving CPU and network intensive operations out from the HTTP request/response lifecycle.

<http://www.highscoresociety.com/>

metaTED (Open Source)

Project Founder, May 2009 - August 2019

Created a Python powered tool for easier downloading of all TED talks. metaTED screen-scrapes TED HTML pages and creates several metalinks of all talks, varying in both the quality levels and possible talk groupings by directory.

<https://github.com/petarmaric/metated>

mesawarati (Open Source, Commercial)

Software Developer, March 2009 - April 2009

Worked as a consultant to implement a Django based photo gallery website that supports content in multiple languages. Fixed bugs, implemented i18n-ized content, refactored code, contributed patches to related Open Source projects.

<http://code.google.com/p/mesawarati/>

dreamy-trac (Open Source)

Project Founder, July 2008 - August 2011

Developed a system to automatically install and manage Trac on DreamHost shared hosting.

<http://code.google.com/p/dreamy-trac/>

opinion-extractor (Open Source)

Project Founder, March 2008 - May 2009

My master thesis project.

<http://code.google.com/p/opinion-extractor/>

Feedjack (Open Source)

Software Developer, October 2006 - July 2007

Feed aggregator Django app. Fixed bugs, implemented i18n support, contributed Serbian localization.

<http://www.feedjack.org/>

Django (Open Source)

Software Developer, August 2005 - Present

Early adopter and contributor to Django. Fixed bugs, helped resolve security issues with Hudson continuous integration server in late October 2010, implemented and improved i18n support, improved Windows support, contributed Serbian localization, managed the Serbian localization team.

<http://www.djangoproject.com/>

Manager of the Django LinkedIn group since October 2009.

<http://www.linkedin.com/groups?gid=50788>

Created a “Django syncmedia” proposal for Google Summer of Code 2009. Even though the proposal hasn’t been accepted then, over the next few years most of the ideas have been implemented in Django.

<http://gsoc2009.petarmaric.com/>

Languages

Native Serbian speaker.

Fluent in English.

Basic French.

Hobbies

Serbian and Japanese culture, photography, hiking, home repairs, cooking, (food) chemistry, espresso brewing.