Petras Vestartas

Address: Avenue D'Ouchy 58,
1006, Lausanne, Switzerland
Date of birth 13/12/1989
Nationality Lithuanian
Phone +41 78 726 14 87
E-mail petrasvestartas@gmail.com
Website www.petrasvestartas.com

LANGUAGE

Lithuanian	Mother tongue
English	Full professional proficiency (C1)
French	Basic user of the language (A2/B1)
Russian	Elementary (A1)

PROFESSIONAL EXPERIENCE

2021-present	**Post-doc IBOIS and NCCR Digital Fabrication,** Laboratory for Timber Constructions (IBOIS), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, www.dfab.ch, www.epfl.ch/labs/ibois (Development: a timber joinery algorithm "compas_wood" (C++ / Python), 5-Axis CNC C# tool-path library for IBOIS team. Acquiring funds for: AR-327 ABB 6700 Robot with track motion and a spindle package. Teaching of courses: MOOC EDX "Advanced Timber Plate Structural Design", EPFL course AR-327 "Introduction to computational architecture". Guidance of PhD students, master theses and interns. Development of architecture and engineering projects for PhD thesis industrial transfer: 1) permit phase of "Construction du Centre d'Activités de Rossiniére, CARoss", Switzerland, 2) permit and execution phases of Phänomena project, Dietikon near the city of Zurich, Switzerland, 3) competition and pre-proposal phase of a raw-timber prototyping for Zollinger system braced by CLT panels for the Brussels Sports Tower - Competition 1st place, Brussels, Belgium)
2016-2017	**Research Assistant, CITA,** Royal Danish Academy of Fine Arts (KADK), Copenhagen, Denmark, www.royaldanishacademy.com/CITA (Flora Robotica and Complex Modelling 5 – Inflated Restraint)
2014-2016	**Architect, DMAA,** Vienna, Austria, www.dmaa.at (Austrian Pavilion – Architecture Venice Biennale, Italy (Commission 2016), Wohnen Am Schweizer Garten, Vienna, Austria (1st Place, Built), Fiducia GAD, Karlsruhe, Germany (Competition 2015), Zollhafen, Mainz, Germany (Competition 2015), Elbrucken, Hafencity-Hamburg, Germany (Recognition), U5 – Wiener Linien, Austria (Competition 2015), Porsche Design Tower, Frankfurt, Germany (Competition 2015), Future Art Lab, Vienna, Austria (3rd Place), Central Park Taopu, China (Competition 2014) Campus Tower, Hafencity, Hamburg, Germany (1st Place, Built), Changchun Forest Park (Competition 2014)
2012-2013	**Architect, Do-Architects,** Vilnius, Lithuania, www.doarchitects.lt (Vilnius Bajorai masterplan)
2011	**Internship, CEBRA,** Aarhus, Denmark, www.cebraarchitecture.dk (Valer Church, Hoje Taastrup masterplan)
2010	**Architect, Vakarinis Fasadas,** Siauliai, Lithuania (Palanga Sanatorium, Druskininkai cafeteria)
2009	**Furniture Designer, Graniteka,** Siauliai, Lithuania (Stone furniture 3D preparation for fabrication)

EDUCATION

2017-2021	**Doctor of Philosophy (Ph.D.) in Architecture**, Laboratory for Timber Construction (IBOIS), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
2013-2014	**Erasmus Exchange Program**, Royal Danish Academy of Fine Arts (KADK), Copenhagen, Denmark

	2012-2014	**Master of Science (M.Sc.) in Architecture**, Vilnius Academy of Arts (VAA), Lithuania
	2008-2012	**Bachelor of Science <u>with distinction</u> (B.Sc.) in Architecture**, Vilnius Academy of Arts (VAA), Lithuania
AWARDS	2022	"Best paper award - Runner Up" at CAADRIA2022
	2013	Lithuanian President Antanas Smetona Scholarship for 1 year
GRANTS AND FUNDING	2020-2022	**EPFL Equipment funding for an industrial robot arm (ABB 6700) and track motion (6.7 m IRBT)**, coordination for the technical specification with robot integrators, software suppliers, EPFL staff and writing documents for the ABB spindle package, automatic tool changer and the multi-move configuration **182'240.- CHF and 45'000.- CHF**
	2021	**MOOC course "Advanced Timber Plate Structural Design"**, grant for video recording, processing and the lectures preparation **33'949.- CHF**
	2022	**ENAC Equipment Call**, High precision scanners (Photoneo, Sick, Roboception) and robotic integration parts. Structures, **33'949.- CHF**
TEACHING	2020-2022	**Introduction to Computational Architecture (AR-327)**, weekly course at EPFL proposed by a joint teaching PhD and Post-doc teaching for Rhino3D, Grasshopper and Python, www.edu.epfl.ch/coursebook/fr/introduction-to-computational-architecture-AR-327
	Online	**Advanced Timber Plate Structural Design**, online teaching resource for generating timber joinery: www.epfl.ch/education/continuing-education/catalog
	2020 - 2021	**Master Thesis supervision,** theoretical thesis, architectural project and robotic cutting teaching for the final year master student Maxim Andrist, https://infoscience.epfl.ch/record/289326.
	2017-2022	**EPFL Master Studio Teaching (MA1, MA2 and the traversal BA/MA studio),** weekly student project revision as part of 20% PhD contract.
	2017-2022	**CNC and ABB Robot Programming,** teaching IBOIS, EPFL students CNC workflow using Rhino Grasshopper plugin Raccoon and 5-Axis CNC machine Maka.
	2020-2021	**Land of Thousand Dance,** joint IBOIS+ALICE EPFL laboratories teaching at ENAC week for a design of reused timber elements.
	2019	**Mesh Discretization and Assembly Methods (Corrugated Cardboard Shell 1:1),** Workshop at Vilnius Academy of Arts (VAA).
	2017	**Aggregations and Graph-Based Modelling,** Workshop at Vilnius Academy of Arts (VAA). Exhibition is held at Architects Association of Lithuania 2017 - March 10-24.

DEVELOPED SOFTWARE

OPENNEST – nesting methods for CNC and Laser cutting, www.food4rhino.com/en/app/opennest

RACCOON – 5-axis CNC Fabrication methods, www.github.com/ibois-epfl/Raccoon

COMPAS_WOOD – timber joinery modelling, www.ibois-epfl.github.io/compas_wood/latest/

COCKROACH – PointCloud Processing Library, www.ibois-epfl.github.io/Cockroach-documentation/

NGON – polygonal mesh processing, www.food4rhino.com/en/app/ngon

FOX – aggregation and graph methods, www.food4rhino.com/en/app/fox

SCATTER – instancing objects for large 3D rendering scenes, www.food4rhino.com/en/app/scatter

SOFTWARE SKILLS

C# – professional and teaching experience

C++ – development using libraries: CGAL, OPENGL (GLFW), BOOST, EIGEN, OPEN3D, LIBIGL, PMP

CMake – basic library linking and super-build pattern

Python – console application, development within Rhino3D and Compas environments.

Java – creative coding mainly using Processing IDE

CAD/GRAPHICS – Rhino3D/Grasshopper, Revit, Autocad, Adobe Package, ArcGIS, V-Ray

PUBLICATIONS

2022	Settimi, P. Vestartas, J. Gamerro, Y. Weinand. **Cockroach: an open-source tool for point cloud processing in cad.** 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), Sydney, Australia, 2022. **Best paper award - Runner Up" at CAADRIA2022**
	N. Rogeau, A. Rezaei Rad, P. Vestartas, P. Latteur, Y. Weinand. **A Collaborative Workflow to Automate the Design, Analysis, and Construction of Integrally-Attached Timber Plate Structures.** 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), Sydney, Australia, 2022
2021	P. Vestartas, A. Rezaei Rad, and Y. Weinand. **Robotically-Fabricated Nexorades from Whole Timber.** International fib Symposium on the Conceptual Design of Structures. Switzerland, 2021.
	A. Rezaei Rad, H. Burton, N. Rogeau, P. Vestartas, and Y. Weinand. **A framework to automate the design of digitally-fabricated timber plate structures.** Computers & Structures, 2021.
2020	P. Vestartas and Y. Weinand. **Joinery Solver for Whole Timber Structures.** WCTE2020, Santiago, Chile, August 24-27, 2020.
	P. Vestartas and Y. Weinand. **Laser Scanning with Industrial Robot Arm for raw wood Fabrication.** ISARC2020, Kitakyushu, Japan, October 27-28, 2020. p. 773-780, 2020.
	L. Vestarte, P. Vestartas, and R. Kucinskas. **Corrugated Cardboard Shell: A Pavilion Project of An Architectural Workshop.** Advances in Architectural Geometry (AAG), 2020.
2019	P. Vestartas, N. Rogeau, J. Gamerro and Y. Weinand. **Modelling Workflow for Segmented Timber Shells using Wood-wood Connections.** Design Modelling Symposium Berlin 2019. Impact: Design with all Senses, p. 596-607, Berlin, Germany, September 23-25, 2019.
	P. Vestartas, L. Palletier, M. T. Nakad, A. R. Rad, and Y. Weinand. **Segmented Spiral Using Inter-Connected Timber Elements.** IASS 2019 Barcelona Symposium: Timber and Bio-based Structures, 2019.

		A. C. Nguyen, B. Himmer, P. Vestartas, Y. Weinand. **Performance Assessment of Double-Layered Timber Plate Shells using Alternative Structural Systems.** Proceedings of IASS Annual Symposia, 2019. A. C. Nguyen, P. Vestartas, Y. Weinand. **Design framework for the structural analysis of free-form timber plate structures using wood-wood connections. Automation in Construction**, 2019.
	2017	P. Ayres, P. Vestartas, M. R. Thomsen. **Enlisting Clustering and Graph-Traversal Methods for Cutting Pattern and Net Topology Design in Pneumatic Hybrids.** Design Modelling Symposium (DMS) Paris 2017. P. Vestartas, M. K. Heinrich, M. Zwierzycki, D. A. Leon, A. Cheheltan, R. La Magna, P. Ayres. **Design Tools and Workflows for Braided Structures.** Design Modelling Symposium (DMS) Paris 2017. M. Zwierzycki, P. Vestartas, M. K. Heinrich, P. Ayres. **High Resolution Representation and Simulation of Braiding Patterns.** Conference: Disciplines & Disruption, ACADIA 2017
BOOK CHAPTERS	2022	S. Berthier, C. Catsaros, M. Rinke, P. Vestartas, S. Vuilleumier, **Les cahiers de l'Ibois 3. Ibois Notebooks 3**, 2022. Introductory text and images are used from the PhD thesis.
	2021	A. Rezaei Rad; P. Vestartas. Structural design methodology in Integrally-Attached Timber Plate structures. **Design of Integrally-Attached Timber Plate Structures**; London: Routledge, Taylor & Francis Group, 2021. p. 216.
	2020	R. Kucinskas. **"Skaitmeninė architektūra VDA/ Digital architecture at the VAA".** Workshop results of 2011-2019 studying and teaching at VAA, 2020.
	2016	D. Kohler. **The Mereological City. A reading of the works of Ludwig Hilberseimer.** Architecture [transcript], Results of the workshop "The Figure and its Figurations", 2016.
	2014	P. Vestartas, **Best graduation projects of architecture students in Baltic states**. Master Thesis project. 2014.
INVITED LECTURES AND CRITS	2022	Lecture: **Robotic Timber Joinery**. Thinking Wood. Research and Practice. Aarhus school of Architecture, Denmark. Lecture: **Research and Teaching**. CITA session. The Royal Danish Academy of Fine Arts, Denmark.
	2021	Jury member for: studio "**Deep Volumes, a House for an Artist**". i.sd. Structure and Design. University of Innsbruck, Austria.
	2017	Jury member for: **3rd year BA studio**, Faculty of Engineering LTH, Lund University, Sweden.

EXHIBITIONS

2022	Exhibition **ENAC 20 Years**: PhD thesis and videos from fabrication experiments together with IBOIS, EPFL built project and ongoing research, Lausanne, Switzerland.
	Exhibition and book: "**TOUCH WOOD**". Raw wood arch prototype using conical joints, Zurich, Switzerland.
2019	Teaching Workshop Exhibition: Corrugated Cardboard Shell 1:1, pavilion exhibition at **ARTVILNIUS'19**, Vilnius, Lithuania.
2018	Exhibition: **Rossiniere city hall exhibition** of prof. dr. Yves Weinand lecture, accompanied by the hexagonal shell and raw wood prototypes, Rossiniere, Switzerland.
2017	Teaching Workshop: "**Aggregation and Graph-Based Modelling** ", Vilnius, Lithuania.
2014	MA Exhibition: "**Best graduation projects of architecture students in Baltic states**", Vilnius, Lithuania.
	Study Workshop: "**Figure and its figuration** ", Vilnius, Lithuania.
2013	Study Workshop: "**From Landscape to Roofscape** ", Vilnius, Lithuania.
2012	Study Workshop: "**Environmental design and its historical trajectories** ", Vilnius, Lithuania.
2011	Study Workshop: "**Architecture as organizational matter** ", Vilnius, Lithuania.