Valeriya Pronina

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https://vpronina.github.io/

Education

Skolkovo Institute of Science and Technology — **Moscow, Russia**
Center for Computational and Data-Intensive Science and Engineering (CDISE) — *2018 - present*
3rd year Ph.D. student under the supervision of Prof. Dmitry Dylov on the topic "Image recovery with trainable restoration algorithms"

École nationale supérieure des Mines de Saint-Étienne (EMSE) — **Saint-Étienne, France**
Biomedical Engineering and Design (BMED) - Master of Research, Magna Cum Laude — *2017 - 2018*
Thesis: "Human tissue characterization using machine learning approach"
GPA 15.52/20

Bauman Moscow State Technical University (BMSTU) — **Moscow, Russia**
Biomedical Systems and Technologies – Master, Summa Cum Laude — *2015 - 2017*
Thesis: "Development of a hardware-software complex for analysis of multichannel signals for functional diagnostics"
GPA 5.0/5.0

Bauman Moscow State Technical University (BMSTU) — **Moscow, Russia**
Biomedical Engineering – Bachelor, Summa Cum Laude — *2011 - 2015*
Thesis: "Development of a biotechnical system with an optical diagnostic channel"
GPA 4.78/5.0

Experience

CREATIS, Biomedical Imaging Research Lab (Lyon, France) — www.creatis.insa-lyon.fr
Research Internship (Master) — *2018*
Research on Deep learning based material decomposition for spectral CT.

GE HEALTHCARE, Industrial Conglomerate (Moscow, Russia) — www.gehealthcare.com
Technical Sales Intern (Diagnostic Cardiology) — *2016 - 2017*
Internship during Master studies in a Medical Equipment company.
Examination of equipment; organization of DEMO equipment movements to sites, including preparation and verification of the support documents; preparation of technical documentation.

YOTA DEVICES, Mobile Broadband (Moscow, Russia) — www.yotadevices.com
Intellectual Property Department Intern — *2015 - 2016*
Analysis of algorithms and technical solutions for patentability of the Yota Phone; creation and maintenance of a patentable objects database.

Honors and Awards

- **Ostrogradski scholarship for PhD students (2020, Embassy of France in the Russian Federation)**
  - Scholarship for PhD students from Russian universities and scientific organizations for research in France.
- **Scholarship of the Academic Council (2016-2017, BMSTU)**
  - Scholarship for students who have shown achievements in scientific and educational activities.
- **Scholarship of the President of the Russian Federation (2016)**
  - Scholarship for students who have shown outstanding abilities in scientific and educational activities and work in priority areas of modernization and technological development of Russian Federation.

Core Technical Skills

Languages: Python, MATLAB, LaTeX, C/C++, Assembly
Libraries: Pytorch, TensorFlow, RLlib, SciKit-Learn, OpenCV
Software: ImageJ, AutoCAD
Operating Systems: Linux, Windows
Reviewer activity: IEEE Signal Processing Letters

Teaching

- **Teaching Assistant**

  Biomedical Imaging and Analytics — Skoltech, 2020, 2021

Publications

- **Conference papers**
  - *A. Kornilova, M. Salnikov, O. Novitskaya, M. Begicheva, E. Sevriugov, K. Shcherbakov,* ***V. Pronina****, D. Dylov. "Deep Learning Framework For Mobile Microscopy." ISBI (2021).*
  - ***V. Pronina****, F. Kokkinos, D. V. Dylov and S. Lefkimmiatis. "Microscopy Image Restoration with Deep Wiener-Kolmogorov filters." ECCV (2020).*
- **Conference talks**
  - *JFPJ Abascal, N. Ducros,* ***V. Pronina****, S. Bussod, P. Douek, S. Arridge, A. Hauptmann, F. Peyrin "Material decomposition in spectral CT using deep learning". ISBI (2020).*
  - *JFPJ Abascal, N. Ducros,* ***V. Pronina****, S. Bussod, P. Douek, S. Arridge, A. Hauptmann, F. Peyrin. "Nonlinear material decomposition in spectral CT using deep learning". AIP (2019).*
- **Journals**
  - *JFJP Abascal, N. Ducros,* ***V. Pronina****, S. Rit, P.-A. Rodesch, T. Broussaud, S. Bussod, P. Douek, A. Hauptmann, S. Arridge, F. Peyrin. "Material Decomposition in Spectral CT Using Deep Learning: A Sim2Real Transfer Approach". IEEE Access, vol. 9, 2021.*
  - *A. Dogadov, A. Maslov,* ***V. Pronina****, N. Rudnyi, A. Kobelev, S. Shchukin. "An EMG-based adaptive algorithm for motion detection in non-stationary noise". Biomedical radioelectronics, no.7, 2016 (in Russian)*
- **Preprints**
  - *JFPJ. Abascal, N. Ducros,* ***V. Pronina****, S. Bussod, A. Hauptmann, et al. "Material decomposition problem in spectral CT: A transfer deep learning approach", HAL (hal-02587658), May 2020. Available: https://hal.archives-ouvertes.fr/hal-02587658*

Extracurricular Projects

CREATIS, Biomedical Imaging Research Lab (Lyon, France) — www.creatis.insa-lyon.fr
Academic Mobility in the framework of Ostrogradski scholarship for PhD students: "Restoration of single-pixel hyperspectral images with the deep learning approach". — *2020*

European Synchrotron Radiation Facility (Grenoble, France) — https://www.esrf.eu
Participation in the ESRF MD1142 project "Validation of spectral CT compared to monochromatic SR CT: Detection of early osteoarthritis". — *2018*

LLC "Myolimb" (Moscow, Russia) — https://www.facebook.com/myolimb/
Participation in the development of a forearm prosthesis control system. — *2016 - 2017*

Languages

Russian (Native), English (Advanced), French (Intermediate)