ARTEM NEKHOROSHIKH



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HIGHER EDUCATION

2019 – 2022 **Docteur**, Automatique, génie informatique, traitement du signal et des images, Centrale Lille, Lille, France

Thesis topic: *Implicit Lyapunov methods for analysis and synthesis of superexponentially stable systems*

Thesis supervisor: Professor Wilfrid Perruquetti

2018 – 2022 **Candidate of Technical Sciences**, Control in Technical Systems, ITMO University, St. Petersburg, Russia

Thesis topic: *Implicit Lyapunov methods for analysis and synthesis of superexponentially stable systems*

Thesis supervisor: Professor Igor B. Furtat

2016 – 2018 **Master's degree of Technical Sciences with First Class Honours**, Networked and Multi-Agent Systems, ITMO University, St. Petersburg, Russia

Thesis topic: *Design and investigation of delay-induced control algorithms in the presence of parametric uncertainties, disturbances and measurement noises*

Thesis supervisor: Professor Igor B. Furtat

2012 – 2016 **Bachelor's degree of Technical Sciences with First Class Honours**, Control in Technical Systems, ITMO University, St. Petersburg, Russia

Thesis topic: *Design of backstepping-based control algorithms for distillation columns*

Thesis supervisor: Professor Igor B. Furtat

FIELDS OF INTERESTS

- automation in biomechanics
- unmanned vehicles
- telesurgery

RESEARCH EXPERIENCE

2019 – 2022 **Junior Researcher**, VALSE team, Center INRIA – Lille Nord Europe, Villeneuve d'Ascq, France

- development of Implicit Lyapunov methods
- design of hyperexponentially and finite/fixed-time stable systems

Head of the team: Professor Denis Efimov

2016 – 2022 **Junior Researcher**, International Research Center of Adaptive and Nonlinear Control Systems, ITMO University, St. Petersburg, Russia

- design of adaptive and robust control algorithms for multi-agent systems
- design of output control schemes using static observers

Heads of the center: Professor R. Ortega and Professor Alexey A. Bobtsov

2016 – 2021 **Junior Researcher**, "Control of Complex Systems" Laboratory, Institute of Problems of Mechanical Engineering Russian Academy of Sciences (IPME RAS), St. Petersburg, Russia

- design of control algorithms for power grids
- design of control algorithms for distillation columns

Head of the laboratory: Professor Alexander L. Fradkov

November 2021 – December 2021 **Junior Researcher**, School of Electrical Engineering, Tel Aviv University, Tel Aviv, Israel

- finite-time stability analysis of time-delay systems
- finite-time stabilization of time-delay systems

Head of the team: Professor Emilia Fridman

TEACHING EXPERIENCE

2016 – 2018 **Teaching Assistant**, ITMO University, St. Petersburg, Russia

Course title: *Nonlinear and Optimal Systems*

- giving lectures and seminars
- advising students experiencing difficulties in the course
- assessment of term papers and final exams
- preparation to the student Olympiad on automatic control

WORK EXPERIENCE

2015 – 2016 **Junior Software Engineer**, Experimental Design Bureau "Elektroavtomatika" named after P.A. Efimov, St. Petersburg, Russia

- design of printed circuit board (PCB) layouts using Altium Designer software
- design of field-programmable gate array (FPGA) firmware using Altera Quartus software
- testing of manufactured PSB's

AWARDS

Scholarships and grants

- Scholarship of the President of the Russian Federation for PhD students studying abroad
  - academic years 2019/2020, 2020/2021 and 2021/2022
- "Vernadsky" scholarship for Russian PhD students studying in France
  - academic years 2019/2020, 2020/2021 and 2021/2022
- Scholarship of the Government of the Russian Federation for graduate students
  - academic years 2016/2017 and 2017/2018
- Grant of the Government of St. Petersburg for graduate students
  - in 2016 and 2019

Student olympiads

- Nord-West Student Olympiad on Automatic Control
  - first-degree diplomas in the fields of "Control Theory", "Information Theory" and "General Test" in 2017 and 2018
  - a third-degree diploma in the field of "Analog and Digital Circuits" in 2018
- Russian Student Olympiad on Applied Mechanics
  - the fifth place in the individual standings in 2015
  - the second place in the team standings in 2015
- St. Petersburg Student Olympiad on Robotics
  - a third-degree diploma in 2015
- ITMO University Student Olympiad on Electrical Engineering
  - a first-degree diploma in 2014

Student awards

- "The best thesis among master's students of ITMO University" (in 2018)
- "The best thesis among undergraduate students of ITMO University" (in 2016)
- "The best student report" at the 18th Conference of Young Scientists "Navigation and Motion Control", St. Petersburg, Russia (in 2016)
- "The best graduate student of ITMO University" (in 2018)
- "The best student of ITMO University" (in 2016)

COURSES ATTENDED

2020

- Time-Delay and Sampled-Data System (EECI School 2020)
  - **Instructors:** Professors Emilia Fridman and Pierdomenico Pepe
  - **Where:** online
  - **When:** from 07/09/2020 until 11/09/2020

2019

- Hybrid Dynamical Systems (The 3rd UCoCoS Training Course)
  - **Instructor:** Laurentiu HETEL
  - **Where:** Villeneuve d'Ascq, France
  - **When:** from 21/10/2019 until 25/10/2019

- Saint Petersburg Summer School on Nonlinear and Adaptive Control (SNAC-2019)
  - **Instructors:** Professors Alessandro Astolfi, Romeo Ortega, Alberto Isidori, Vadim Utkin, Arjan van der Schaft, Stefano Stramigioli
  - **Where:** St. Petersburg, Russia
  - **When:** from 03/06/2019 until 07/06/2019

2018

- Convergence Theory of Observers (EECI School 2018)
  - **Instructor:** Professor Laurent Praly
  - **Where:** St.-Petersburg, Russia
  - **When:** from 23/04/2018 until 27/04/2018

2017

- Nonlinear observers: applications to aerial robotic systems (EECI School 2017)
  - **Instructors:** Professors Robert Mahony, Jochen Trumpf and Tarek Hamel
  - **Where:** St.-Petersburg, Russia
  - **When:** from 29/05/2017 until 02/06/2017

SKILLS

- solid mathematical background (linear algebra and calculus)
- coding in Matlab (numerical integration & LMI solvers) and Python (parsing, analysis & visualization of the data from fitness trackers)
- advanced knowledge of LaTeX

LANGUAGES

- Russian (native)
- English (C1)
- French (A2)

REFERENCES

- Professor Igor B. Furtat, Faculty of Control Systems and Robotics, ITMO University (thesis supervisor).
E-mail: cainenash@mail.ru

- Professor Wilfrid Perruquetti, Ecole Centrale (thesis supervisor).
E-mail: wilfrid.perruquetti@centralelille.fr

- Professor Denis Efimov, VALSE team, INRIA (head of the team)
E-mail: denis.efimov@inria.fr

- Professor Alexey A. Bobtsov, International Research Center of Adaptive and Nonlinear Control Systems, ITMO University (head of the center)
E-mail: bobtsov@mail.ru