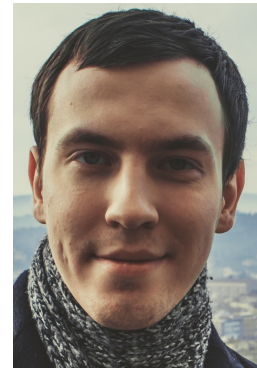


ANTON AFANASEV



PERSONAL DATA

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EDUCATION

- 2017 – current | **Skolkovo Institute of Science and Technology, PHD,**
Engineering Systems. Space Center.
Thesis: “Algorithms of decentralized coordinated control for satellites’ swarms dynamics” | Advisor: [Anton IVANOV](#)
- 2015-17 | **Moscow Institute of Physics and Technology, MSc,**
Department of Radioengineering and Cybernetics.
2015-17 | **Skolkovo Institute of Science and Technology, MSc,**
Space Systems.
Thesis: “Integration of heterogeneous data sources in the problem of trajectory estimation” | Advisor: [Tatiana PODLADCHIKOVA](#)
- 2011-15 | **Moscow Institute of Physics and Technology, BSc,**
Department of Radioengineering and Cybernetics.
GPA: **4.70/5.00**
Thesis: “Using a service-oriented approach in the construction of a multi-sensor integrated environmental monitoring system” | Advisor: [Sergey BELOV](#)

WORK EXPERIENCE

- 2019 – CURRENT | **Research Intern at [SPACE CENTER, SKOLTECH](#)**
Development of an Attitude Determination and Control System for 3U Cube-Sats in Skoltech Swarm mission
The work is highly integrated with my thesis research, where I develop robust algorithms of attitude control for the swarm of CubeSats, which exchange and interpolate their measurements to enhance the accuracy of the spacecrafts orientation, mostly via Kriging and Extended Kalman Filter algorithms.
- JUNE-SEPT 2016 | **Summer Intern at [ROSTELECOM](#)**
Development of a mathematical model to identify behavioral anomalies of network in the Data Center
I developed prototype of the system in virtual switches, which allows to form normal profile of the networking virtual machines and to form deviations from them. Information about flow was collected with the help of pmacct daemon and aggregated into sql-tables. These tables were investigated with the python business-logic. I constructed a simple model of determining of anomalies: by known deviation of number of tcp-packets with given parameters. Also, the model of random flow was done and implemented.
- 2015-16 | **Engineer at [PJC «INTERSTATE CORPORATION «VIMPEL»](#)**

	<p><i>Design and simulation of integrated systems of radio monitoring and navigation</i></p> <p>Main work done by me:</p> <ul style="list-style-type: none"> • Research of the current state in processing of heterogeneous data with extended and linear Kalman filters. • Development of new methods for data assimilation and elaboration of specifications for short-ranged radar stations.
2014-15	<p>Engineer at PJC «RADIO ENGINEERING CORPORATION «VEGA»</p> <p><i>Design and simulation of service-oriented navigation systems</i></p> <p>Main work done by me:</p> <ul style="list-style-type: none"> • Research of new software architectures, which are fit to be used in the modern avia-navigation systems. • Research in the design of distributed environmental monitoring systems.

INDEPENDENT PROJECTS

OCT-NOV 2012	<p>Development of the game "Brain-ring" on the microcontroller</p> <p>I created a model of intellectual game "Brain-ring" on the microcontroller Atmega 8, written in the language Assembler, within the semester course "Microcontrollers".</p> <p>My role: hardware and software implementation.</p>
JAN-MAY 2014	<p>Java-project FAVORTRIPPALS</p> <p>As the part of the team, we created Java-application, tied to social networks, which creates a base for the upcoming trips of friends. The user can create requests for the purchase of goods abroad for the selected friend. Full description is in the presentation.</p> <p>My role: 2 main classes out of 6, web-implementation and presentation.</p>
SEPT-DEC 2015	<p>Cryptographic input data controller in the NOR Flash memory chip</p> <p>The project is written in Verilog. This controller has the ability to write data to flash memory (read from flash memory). During processing, this data is encrypted and stored on a NOR flash memory. When it is necessary to read the information, it is decrypted and transferred via UART to external devices.</p> <p>My role: test blocks implementation.</p>

ARTICLES

1. *A.Afanasev, M.Shavin, A.Ivanov, D.Pritykin* Tetrahedral Satellite Formation: Geomagnetic Measurements Exchange and Interpolation. *Advances in Space Research*. 2020 in press.
2. *Afanasev A.A., Ivanov A.B.* Robust software design for nanosatellites with single board computer. *Proceedings of MIPT*. 2019. V. 11, N 2. P. 5–15.

CONFERENCES

- **A.Afanasev, A.Ivanov, A.Mahfouz, D.Pritykin**, "Attitude control algorithms in a swarm of CubeSats: Kriging interpolation and coordinated data exchange", 5th IAA Conference on University Satellite Missions and CubeSat Workshop, GAUSS Srl, Rome, Jan 28-31, 2020. Paper IAA-AAS-CU-20-01-01.
- participated in the first international workshop «Methods and Tools for Rigorous System Design (MeTRiD 2018)», at the «European Joint Conference on Theory & Practice of Software 2018 (ETAPS 2018)», organized in the Aristotle University of Thessaloniki.

- **A.Afanasev, A.Ivanov**, “Robust software development for satellite systems”, Poster session of Skoltech & MIT Conference “Shaping the Future: Big Data, Biomedicine and Frontier Technologies”, Skolkovo Innovation Center, Moscow, Oct 15-16, 2018.
- **S.G.Belov, A.A.Afanasev**, “Using a service-oriented approach in the construction of a multi-sensor integrated environmental monitoring system”, 59th Scientific MIREA Conference, PJSC «Radio Engineering Corporation «Vega»

GRANTS

- RFBR # 19-38-90278\19 “Algorithms of Decentralized Coordinated Control for Satellites’ Swarms Dynamics” for postgraduates, 2 years.

Supervisor: Anton Ivanov.

COMPUTER SKILLS

Coding: **Python**: SciPy libraries, scikit-learn, soaplib, PyQt;
Java + SQL: Hibernate, Maven, Spring;
C/C++: OpenCV; Qt;
Matlab;
Verilog.

Other: \LaTeX , ubuntu, git, C for AVR 8-bit.

LANGUAGES

RUSSIAN: Native

ENGLISH: B2 (TOEFL-ITP 10/08/15: 600/627)

GERMAN: B1 (Basic)

MAIN ACHIEVEMENTS

- Scholarship Abramov’s Charitable Foundation for the Development of Innovation Education holder
- Twice winner of the All-Russian physics tournament for students in 2013 and 2014
- Winner of MIPT Radio Engineering tournament in 2014