

Curriculum Vitae
of Konstantin Ryabinin

Place and Date of Birth

Perm, Russia, 25.05.1989

Personal Web Page

<https://scivi.tools/ryabinin/>

Education

- Perm State University (Perm, Russia), 2020
Faculty of Physics
Training course “STM32 Microcontrollers Programming”
- Barcelona Supercomputing Center (Barcelona, Spain) 2013
Training course “Introduction to CUDA Programming”
- Perm State University (Perm, Russia), 2011–2014
Faculty of Mechanics and Mathematics
Graduate school:
Speciality “Mathematical and Software Support for Computers, Computing Complexes, and Computer Networks”
- Perm State University (Perm, Russia), 2006–2011
Faculty of Mechanics and Mathematics
Higher education:
Speciality “Applied Mathematics and Informatics”,
Specialization “Mathematical Support of Computing Systems”
- St.-Josef-Gymnasium (Dingelstädt, Germany) 2005
School exchange internship
- Lessinggymnasium (Braunschweig, Germany) 2004
School exchange internship
- School with profound learning of German (Perm, Russia) 1996–2006
Elementary- and high school

Academic Achievements

- Award for the best scientific research among young scholars of Perm State University 2021
- Award for the best scientific research among young scholars of Perm State University 2015
- Degree of PhD in Physical and Mathematical Sciences 2015
PhD thesis: Methods and Means of Adaptive Multiplatform Scientific Visualization Systems’ Development
- University diploma: the qualification of “Mathematician, System Programmer” in speciality “Applied Mathematics and Informatics” 2011
Diploma project: Cross-platform Object-oriented Graphics Engine Development Based on OpenGL

Work Experience

- Astronomisches Rechen-Institut, Centre for Astronomy of Heidelberg University (Heidelberg, Germany) 2023–now
Research Worker
Development of parallel direct solver for systems of astrometric equations within Japan Astrometry Satellite Mission for INfrared Exploration (JASMINE)
- Acronis International GmbH (Belgrade, Serbia) 2022–2023
Senior Developer
Development of remote desktop services within Acronis Cyber Protect, especially the screen capturing and remote control modules for GNU/Linux
- Nulana Ltd. Software Company (Perm, Russia) 2012–2022
Senior Developer
Development:
 - *Multi-Platform Remote Desktop Application*
(<https://remotix.com>)
 - *Mobile Charting Library*
(<https://nchart3d.com>)
- Saint Petersburg State University (Saint Petersburg, Russia), Institute of Cognitive Studies, 2021–2022
Senior Researcher
Research:
 - *Human-Computer Interaction*
 - *Virtual Reality*
- Perm State University (Perm, Russia), 2017–2022
Faculty of Philology,
Laboratory of Sociocognitive and Computational Linguistics,
Senior Researcher
Research:
 - *Scientific Visualization and Visual Analytics*
 - *Human-Computer Interaction*
 - *Internet of Things*
 - *Brain-Computer Interfaces*
- Perm State University (Perm, Russia), 2016–2023
Faculty of Mechanics and Mathematics,
Department of Mathematical Support of Computing Systems,
Associate Professor
Teaching:
 - *Computational Geometry and Computer Graphics*
(Bachelor course)
 - *Virtual Reality and Multimedia* (Master course)
 - *Operating Systems* (Bachelor course)
 - *Parallel Computing* (Bachelor course)
 - *Internet Technologies* (Master course)

Supervising Bachelor- and Master students' projects in the topics related to scientific visualization, visual analytics, computer graphics, Internet of Things, and human-computer interaction

- Perm State University (Perm, Russia), 2011–2016
Faculty of Mechanics and Mathematics,
Department of Mathematical Support of Computing Systems,
Teaching Assistant
Teaching:
 - *Discrete Mathematics (Bachelor course)*
 - *Computational Geometry and Computer Graphics (Bachelor course)*

International Conference Talks

- 24rd International Conference on Computational Science ICCS 2024 2024
(Málaga, Spain)
Talk: Direct Solver Aiming at Elimination of Systematic Errors in 3D Stellar Positions
- 9th International Conference on Fuzzy Systems and Data Mining 2023
FSDM 2023 (Chongqing, China)
Talk: Eye Tracking Data Mining Based on Fuzzy Sets of Fixations
- 23rd International Conference on Computational Science ICCS 2023 2023
(Prague, Czech Republic)
Talk: Semantic Hashing to Remedy Uncertainties in Ontology-Driven Edge Computing
- 22th International Conference on Computational Science ICCS 2022 2022
(London, UK)
Talk: Towards Mitigating the Eye Gaze Tracking Uncertainty in Virtual Reality
- 7th International Conference on Fuzzy Systems and Data Mining 2021
FSDM 2021 (Seoul, South Korea)
Talk: Ontology-Driven Data Mining Platform for Fuzzy Classification of Mental Maps
- 31th International Conference on Computer Graphics and Vision 2021
GraphiCon 2021 (Nizhny Novgorod, Russia)
Talks:
 - *Ontology-Driven Toolset for Audio-Visual Stimuli Representation in EEG-Based BCI Research*
 - *Visual Analytics Tools for Polycode Stimuli Eye Gaze Tracking in Virtual Reality*

- 30th International Conference on Computer Graphics and Vision
GraphiCon 2020 (Saint Petersburg, Russia) 2020
Talks:
 - *Graph-Based Visual Analytics Tools for Digital Humanities Research*
 - *Scientific Visualization System on a Chip with Tangible User Interface*
- 29th International Conference on Computer Graphics and Vision
GraphiCon 2019 (Bryansk, Russia) 2019
Talks:
 - *Tangible Interfaces for the Virtual Reconstructions of Museum Exhibits*
 - *Perceptive-Cognitive User Interface for Visual Analytics Systems*
- 19th International Conference on Computational Science ICCS 2019
(Faro, Portugal) 2019
Talk: Ontology-Driven Automation of IoT-Based Human-Machine Interfaces Development
- 28th International Conference on Computer Graphics and Vision
GraphiCon 2018 (Tomsk, Russia) 2018
Talks:
 - *Using IoT Devices Powered by Scientific Visualization Tools to Create Interactive Paleontological Museum Exhibitions*
 - *Visual Analytics Methods of the Verbal Behavior Variability of Social Networks Users Depending on Their Individual Psychological Features*
- 18th International Conference on Computational Science ICCS 2018
(Wuxi, China) 2018
Talk: Calibration and Monitoring of IoT Devices by Means of Embedded Scientific Visualization Tools
- 27th International Conference on Computer Graphics and Vision
GraphiCon 2017 (Perm, Russia) 2017
Talks:
 - *Tackle Lightweight Hardware Robotic Devices Data Monitoring Problems by Means of Scientific Visualization Systems*
 - *Integration of Scientific Visualization Toolset SciVi with Information System Semograph*
- 17th International Conference on Computational Science ICCS 2017
(Zürich, Switzerland) 2017
Talk: High-Level Toolset for Comprehensive Visual Data Analysis and Model Validation
- 26th International Conference on Computer Graphics and Vision
GraphiCon 2016 (Nizhny Novgorod, Russia) 2016

Talk: New Ways of Adapting Scientific Visualization Systems to Third-Party Solvers

- 25th International Conference on Computer Graphics and Vision GraphiCon 2015 (Protvino, Russia) 2015
Talk: Adaptation of Scientific Visualization Systems to Third-Party Solvers
- 15th International Conference on Computational Science ICCS 2015 (Reykjavík, Iceland) 2015
Talk: Using Scientific Visualization Tools to Bridge the Talent Gap
- 14th International Conference on Computational Science ICCS 2014 (Cairns, Australia) 2014
Talk: Development of Multiplatform Adaptive Rendering Tools to Visualize Scientific Experiments
- 13th International Conference on Computational Science ICCS 2013 (Barcelona, Spain) 2013
Talk: Adaptive Scientific Visualization System for Desktop Computers and Mobile Devices
- 22th International Conference on Computer Graphics and Vision GraphiCon 2012 (Moscow, Russia) 2012
Talk: Development of an Adaptive Multiplatform Visualizer of the Scientific Calculations Results for High-Performance Computing Systems

Invited Talks

- 8th International Conference on Fuzzy Systems and Data Mining FSDM 2022 (Xiamen, China) 2022
Talk: Ontology-Driven Visual Analytics Platform for Semantic Data Mining and Fuzzy Classification
<http://www.fsdmconf.org/Speaker/Details?id=654>

Peer Reviewing and Conference Organization

- Scientific Visualization journal 2015–now
Peer-reviewing of multiple papers
- Occasional peer review requests from journals like “3D Research”, “Biomechanics”, “Journal on Computer Science and Information Technologies”, “Computer Science”, “Measurement”, etc. 2018–now
- International Conference on Fuzzy Systems and Data Mining FSDM 2022
Peer-reviewing of multiple papers

- International Conference on Computer Graphics and Vision
GraphiCon
*Membership in Program Committee,
Peer-reviewing of multiple papers* 2016 – 2022
- International Conference on Computer Graphics and Vision
GraphiCon
Conference Vice-Chair 2017

Programming and Engineering Skills

- Actively used programming languages:
C/C++, Python, JavaScript/TypeScript, Objective-C, GLSL, bash
- Rarely used programming languages:
Java, Swift, Go, Fortran, HLSL, Assembler
- Software programming experience:
 - Desktop computers: *macOS, GNU/Linux, Windows*
 - Mobile devices: *iOS, Android*
 - Embedded systems: *Raspberry Pi OS, Armbian, FreeRTOS*
- Firmware programming experience:
AVR (ATmega as a part of Arduino platform; ATtiny standalone), ESP8266, STM32
- Quantum computing experience:
*Basic knowledge of quantum computers organization and quantum gates functioning;
coding with Qiskit*
- Specifications, frameworks, and tools knowledge and programming experience:
*OpenGL, OpenCV, OpenCL, OpenMAX, Direct3D, Metal, H264 (hardware and
software encoding/decoding), Qt, X11, Wayland, FreeRDP (including RAIL extension)*
- Experience in using:
Unreal Engine, Blender 3D, Cura, GIMP, Inkscape, Keynote, LaTeX
- 3D printing experience:
FDM with Cartesian kinematics
- Electrical engineering experience:
*Schematics reading, soldering, prototyping, printed circuit boards creating,
basics of electronics like how to build boolean functions using transistors or how to
build filters using RC-circuits*

Mathematical Skills

- Computational Geometry
- Linear Algebra
- Signal Processing

Public Repositories

- Casual projects:
<https://github.com/icosaeder>
- SciVi project (developed during the scientific research):
<https://github.com/scivi-tools/>

Language Skills

- English (74 points in EF Standard English Test: <https://www.efset.org/cert/sKQv8y>)
- German (Deutsches Sprachdiplom Stufe II)
- Russian (native)

Miscellaneous

- Teamwork experience, including team project work using Trello, Jira, Git (GitHub, GitLab, BitBucket), and Subversion
- Experience and interest in popularizing Computer Science and related scientific fields to the broader audience; experience in making presentations popularizing Computer Graphics, Scientific Visualization, Visual Analytics, Virtual Reality, and Internet of Things