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), 2021–2022
  Institute of Cognitive Studies,
  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

- 10th International Conference on Fuzzy Systems and Data Mining 2024
  FSDM 2024 (Matsue, Japan)
  Talk: Satellite Telescope Self-Calibration Through Precise Stellar Data Mining

- 24th 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

- 22nd 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

- 22nd 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 2016–2022
  Membership in Program Committee,
  Peer-reviewing of multiple papers

- International Conference on Computer Graphics and Vision GraphiCon 2017
  Conference Vice-Chair

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