Dr. Yulia Gryaditskaya

Senior research fellow, CVSSP, UK

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Employment

02/2020– present **CVSSP**, *Surrey, UK*, Senior research fellow,
Line manager: Prof. Yi-Zhe Song.
- Co-advising Ph.D and master students in deep-learning for sketch-related applications: sketch-based modeling, sketch segmentation, sketch-based 3D shape/image retrieval, sketch captioning and sketch generation.
- Writing research papers and research code (Python,C++,PyTorch,MatLab)
- Publishing at top-tier conferences and journals

02/2017– 01/2020 **Inria**, *Sophia Antipolis, France*, Postdoctoral researcher,
Line manager: Dr. Adrien Bousseau (Research Director - Inria).
- Conducting first-author research on concept sketch understanding.
- Co-advising master students on NPR rendering, sketch representation and sketch video processing.
- Writing research code (MatLab, C/C++, OpenGL/WebGL, Qt, Javascript/Node.js, SQL, libigl, Python, TensorFlow) and research papers
- Publishing and presenting at top-tier conferences and journals

04/2014 – 09/2014 **Technicolor R & D**, *Rennes, France*, Research Internship,
Advisor: Dr. Erik Reinhard (Distinguished Scientist - InterDigital, Inc.).
- Conducting first-author research on HDR video capture on a mobile device.
- Writing research code (C/C++, MatLab, Java), a research paper and a patent
- The research paper was published at Computer Graphics Forum and an international level patent was filed

11/2012 – 12/2016 **Max Planck Institute for Informatics**, *Saarbrücken, Germany*, Ph.D candidate,
Supervisors: Dr. Erik Reinhard, Prof. Dr-in.z. Karol Myszkowski, Prof. Dr. Hans Peter-Seidel.
- Conducting first-author research on HDR video capture on a mobile device, HDR imaging and materials editing in structured light fields.
- Writing research code (C/C++, MatLab, Java) and research papers
- Publishing and presenting at top-tier conferences and journals

Education

11/2012 – 12/2016 **Ph.D. in Computer Graphics and Vision**, *Max Planck Institute for Informatics, Saarland University, Saarbrücken, Germany*, *Magna cum laude*.
Dissertation title: 'High Dynamic Range Imaging: Problems of Video Exposure Bracketing, Luminance Calibration and Gloss Editing'

09/2007 – 06/2012 **Diploma in Applied Mathematics and Computer Science**, *Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, Russia*, Awarded a scholarship, *Excellent*.
Thesis title: 'Truncated sequential quadratic programming method for degenerate optimization problems' Advised by Prof. Dr. Alexey F. Izmailov

Additional education

2000 – 2004 **Art school**, *Zhukovsky, Moscow region*, Russia.

Publications

Journal publications

2022 **One Sketch for All: One-Shot Personalized Sketch Segmentation**,
IEEE Transactions on Image Processing,
A. Qi, **Y. Gryaditskaya**, T. Xiang, and YZ. Song.
(Code coming soon)

2021 **Towards Fine-Grained Sketch-Based 3D Shape Retrieval**,
IEEE Transactions on Image Processing,
A. Qi, **Y. Gryaditskaya**, J. Song, Y. Yang, Y. Qi, T.M. Hospedales, T. Xiang, and YZ. Song.
(Code coming soon)

2020 **Towards Practical Sketch-based 3D Shape Generation: The Role of Professional Sketches**,
IEEE TCSVT.
Y. Zhong, Y, Qi, **Y. Gryaditskaya**, H. Zhang, YZ. Song

2020 **Pixelor: A Competitive Sketching AI Agent. So you think you can beat me?**,
ACM Trans. on Graph. (Proc. of SIGGRAPH Asia),
AK. Bhunia, A. Das, UR. Muhammad, Y. Yang, T. Hospedales, T. Xiang, **Y. Gryaditskaya**, Yi-Zhe Song.
(Code available)

2020 **Lifting Freehand Concept Sketches into 3D**,
ACM Trans. on Graph. (Proc. of SIGGRAPH Asia),
Y. Gryaditskaya, F. Hahnlein, C. Liu, A. Scheffer and A. Bousseau.
(Code available)

2019 **OpenSketch: A Richly-Annotated Dataset of Product Design Sketches**,
ACM Trans. on Graph. (Proc. of SIGGRAPH Asia),
Y. Gryaditskaya, M. Sypesteyn, J.W. Howtijzer, S. Pont, F. Durand and A. Bousseau..
(Code available)

2015 **Motion Aware Exposure Bracketing for HDR video**,
Computer Graphics Forum (Proc. EGSR).
Y. Gryaditskaya, T. Pouli, E. Reinhard, K. Myszkowski, and H.-P. Seidel.

2014 **Sky Based Light Metering for HDR Images**,
Computer Graphics Forum (Proc. Pacific Graphics),
Proc. of 3DV.
Y. Gryaditskaya, T. Pouli, E. Reinhard, and H.-P. Seidel

Conference publications

2021 **Fine-grained VR sketching and Retrieval: Dataset and insights.**,
Proc. of 3DV.
L. Luo, **Y. Gryaditskaya**, Y. Yang, T. Xiang, YZ. Song

2020 **Towards 3D VR-Sketch to 3D Shape Retrieval**,
Proc. of 3DV, (Oral),
L. Luo, **Y. Gryaditskaya**, Y. Yang, T. Xiang, YZ. Song.
(Code available)

2020 **Deep Sketch-Based Modeling: Tips and Tricks**,
Proc. of 3DV, (Spotlight),
Y. Zhong, **Y. Gryaditskaya**, H. Zhang, YZ. Song .
(Code available)

2019 **Bitmap or Vector? A study on sketch representations for deep stroke segmentation**,
Journées Françaises d'Informatique Graphique et de Réalité Virtuelle.
F. Hahnlein, **Y. Gryaditskaya** and A. Bousseau

2016 **Gloss Editing in Light Fields**,
VMV.
Y. Gryaditskaya, B. Masia, P. Didyk, K. Myszkowski, and H.-P. Seidel.

Patents

2017 **Method for generating an HDR image of a scene based on a tradeoff between brightness distribution and motion.**,
US Patent 9,648,251.
T. Pouli, **Y. Gryaditskaya**, E. Reinhard

Thesis

2017 **High dynamic range imaging: problems of video exposure bracketing, luminance calibration and gloss editing**.
Y. Gryaditskaya

Released datasets

2020 **SlowSketch**, *1700 sketches from 12 participants of 20 categories, where the participants were asked to target early sketch recognition.*

2020 **ProSketch-3DChair**, *A dataset of 1500 chair sketches by professional artists: front, side and 3/4 viewpoints.*

2020 **3D VR sketches**, *139 chair and 28 bathtub 3D VR sketches by novices.*

2020 **OpenSketch++**, *Additional vector concept sketches.*

2019 **OpenSketch**, *A richly-annotated dataset of product design sketches.*

2014 **Calibrated HDR Images**, *A calibrated set of HDR images, with visible sky regions and color checker.*

Professional Activities

Area Chair

2022 SIGGRAPH Asia

2022 SIGGRAPH North America

2021 SIGGRAPH Asia

Organizer

2022 CVMP: Short Papers and Demos Chair

2021 1st Workshop on Sketching for Human Expressivity (SHE) ICCV 2021

2021 Weekly group meetings for more than 20 attendees

Reviewer

PC Member

- Eurographics Symposium on Rendering (EGSR 2022)
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2022)
- International Conference on 3D Vision (3DV 2021)
- IEEE International Conference on Computer Vision (ICCV 2021)
- Computational Visual Media Conference (CVM 2020)

Journals

- ACM Transactions on Graphics (TOG 2016)
- IEEE Transactions on Visualization and Computer Graphics (TVCG 2020,2021)
- Computer Animation and Virtual Worlds (CAVW 2020,2021)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT 2020)
- IEEE Transactions on Image Processing (TIP 2018,2019)
- Computers & Graphics (2016)
- Journal of Electronic Imaging (JEI 2015,2017,2018)
- Journal on Image and Video Processing (JVIP 2016)
- Multimedia Systems (2015)

Conferences

- SIGGRAPH North America (2014-,//,-2021)
- SIGGRAPH Asia (2017)
- Eurographics (2018,2019,2021,2022)
- Pacific Graphics (2020)
- VMV (2016)

Keynote talks

07/2022 CogSci workshop: "From Images to Symbols: Drawing as a Window into the Mind" (upcoming)

06/2022 2 CVPR workshops (upcoming)

Invited talks

06/2021 Autodesk, UK

02/2021 University of Bath, UK

12/2020 Christmas Colloquium on Computer Vision, Skolkovo, Moscow, Russia

11/2018 MIT CSAIL, Boston, USA

Students

2021-present **Pinaki Nath Chowdhury**, *(coadvised with Yi-Zhe Song)*, PhD student.

2020-present **Ling Luo**, *(coadvised with Yi-Zhe Song)*, PhD student.

2020-present **Yue Zhong**, *(coadvised with Yi-Zhe Song)*, PhD student.

2020-2021 **Anran Qi**, *(coadvised with Yi-Zhe Song)*, PhD student.

2019-present **Felix Hähnlein**, *(coadvised with Adrien Bousseau)*, PhD student.

2021 **Harichander Singaravelu**, Master student in Computer Science.

2019 **Felix Hähnlein**, *(coadvised with Adrien Bousseau)*, Research Internship: 'A study on sketch representations for deep stroke segmentation'.

2018 **Adele Saint-Denis**, *(coadvised with Adrien Bousseau)*, Research Internship: 'Non-photorealistic rendering'.

2017 **Marina Menghetti**, *(main adviser Adrien Bousseau)*, Research Internship: 'Strokes extraction from input video'.

2015 **Juliette Pelletier**, Engineering Internship: 'HDR Video Capture on a Mobile Device'.

Teaching

2015, 2016 Realistic Image Synthesis: HDR & Tone Mapping

Programming Languages

In-usage: MatLab, C/C++, Python, HTML/Javascript, Experience: Java

Languages

English: fluent

French: intermediate

Russian: mother tongue

March 24, 2022