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Egor Burkov

Profile

- **I am** a computer vision researcher with a solid academic record and a rather diverse exposure (design, entrepreneurship, teaching etc).
- **I am looking for** a challenging research role in generative AI.

Work

2023 **Meta Reality Labs – Zürich**, *Research Scientist Intern)*
Made large diffusion models for image generation (Emu) work with less steps (= faster).

2018–21 **Samsung AI Center – Moscow**, *Research Scientist*
Researched human capture in a broad sense for AR/VR telepresence.
Implemented software demos, presented at top conferences, led small teams.
Representative project: head animation with latent pose vectors.

2015–17 **VisionLabs**, *Research Engineer*
Optimized vision algorithms in C and CUDA.
Improved and compressed neural nets by studying and implementing latest research.
Example projects: real-time facial keypoint detection on smartphones; OpenCV bindings for Lua (Torch).

Formal Education

2018–24 **PhD in Computer Science**, *Skoltech, supervised by Victor Lempitsky*
Thesis: *Learning from Data for Human Modeling and Tracking*.
Many enterpreneurship courses, presented own project at SLUSH. Taught 8 and authored 3 courses.
Built and managed research group's DIY GPU cluster.

2016–18 **MSc in Computer Science**, *Skoltech*, with distinction
Thesis: *Deep Neural Networks with Box Convolutions*, accepted to NeurIPS.

2012–16 **BSc in Computer Science**, *HSE University*
Thesis: *ConvNet-based Human Segmentation Using Background Subtraction Map*.
Many academic performance scholarships.

Selected Publications

- **Neural Head Reenactment with Latent Pose Descriptors**. CVPR 2020. **E. Burkov et al.**
- **Multi-NeuS: 3D Head Portraits from Single Image with Neural Implicit Functions**. IEEE Access 11, 2023. **E. Burkov et al.**
- **Learnable Triangulation of Human Pose**. ICCV 2019. **K.Iskakov et al.**
- **Deep Neural Networks with Box Convolutions**. NeurIPS 2018. **E. Burkov, V. Lempitsky**
- **Textured Neural Avatars**. CVPR 2019. **A. Shysheya et al.**
- **Few-Shot Adversarial Learning of Realistic Neural Talking Head Models**. ICCV 2019. **E. Zakharov et al.**

Open-Source Software

- **Box convolution layer for PyTorch**. ⋆ 511
- **Head reenactment with latent pose descriptors**. ⋆ 181
- **Learnable human pose triangulation**. ⋆ 1.1k
- **OpenCV bindings for Torch (Lua)**. ⋆ 209

Everything Else

- Engineering passions: optimized / parallel / high-performance computing, embedded systems.
- AI research passion: self-supervised learning.
- Long-term public good goal: alleviate suffering via education.

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