

# SHERZOD SALOKHIDDINOV

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9 years of experience as an AI & Computer Vision Research Engineer, with a strong focus on 3D technologies.

## Skills

- Python | C++ | C# | Java | JavaScript | PostgreSQL | MySQL | Docker | Git | Flask | PyTorch | Bash
- Computer Vision | Deep Learning | Machine Learning | NeRF | 3D Reconstruction | Machine Vision | Generative AI | GAN
- Git | FastAPI | OOP | Data Structures & Algorithms | Image Processing | Photogrammetry | Gaussian Splatting

## Experience

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|--|------------------------------------|---------------------------|--------------------------|
| <b>Senior AI Research Engineer</b>   | <b><u>Riso Convergence</u></b>     | <i>Seoul, South Korea</i> | <b>11/2023 - Current</b> |
| <ul style="list-style-type: none"><li>• Driving innovation through AI and 3D technologies across multiple projects.</li><li>• <b>Scanner/Fax Device Control API</b>: Developed backend components for a <b>DataMatrix decoding</b> project, including controlling scanner/fax devices, receiving documents, and applying <b>image processing</b> techniques to accurately read DataMatrix codes</li><li>• <b>SuperCaddy App</b>: Created dynamic scorecard content by leveraging AI-based <b>depth effect</b> animations generated from a single image.</li><li>• <b>3D-Viewer &amp; Converter</b>: Created a web-based 3D viewer using Three.js, incorporating advanced 3D controls such as tree-based layer views, clipping planes, and various camera types. Additionally, managed the <b>3D model conversion</b> process for multiple formats, including JT, FBX, GLB/GLTF, and OBJ.</li></ul>   |                                    |                           |                          |
| <b>Senior AI Research Engineer</b>   | <b><u>FourLAB</u></b>              | <i>Seoul, South Korea</i> | <b>09/2022 - 10/2023</b> |
| <ul style="list-style-type: none"><li>• <b>Pix2Poly App</b>: Managed the Pix2Poly project, overseeing the development of 3D processing components, including <b>3D reconstruction</b>, Generative 3D (from single image and text), 3D files format conversion, <b>Blender</b> plugin development, and text-to-3D effects.</li><li>• Led NeRF-based 3D reconstruction projects aimed at developing <b>Metaverse</b> and <b>Digital Twin</b> applications, utilizing tools such as NeRF, Three.js, <b>Flask</b>, and PyTorch.</li><li>• <b>Technologies</b>: Photogrammetry, <b>NeRF</b> (Neural Radiance Fields), 3D Gaussian Splatting, etc.</li></ul>   |                                    |                           |                          |
| <b>AI &amp; Computer Vision Engineer</b>   | <b><u>Far Island Corp.</u></b>     | <i>Seoul, South Korea</i> | <b>03/2021 - 08/2022</b> |
| <ul style="list-style-type: none"><li>• Developed advanced AI algorithms for <b>Machine Vision</b> applications.</li><li>• <b>Deep Learning Framework</b>: Created AI components for a GUI-based deep learning framework, enhancing machine vision tasks.</li><li>• <b>Bolt Inspection System</b>: Developed an image classification algorithm for bolts, improving quality control with 94% accuracy.</li><li>• <b>Model Optimization</b>: Implemented and optimized PyTorch models with TensorRT, boosting inference speed sixfold.</li><li>• <b>Synthetic Dataset Creation</b>: Created synthetic datasets using Blender and Python scripts to improve the diversity and robustness of training data, leading to more accurate and reliable model outputs.</li><li>• <b>3D Reconstruction and Point Cloud Registration</b>: Developed advanced techniques for 3D reconstruction and point cloud registration using multi-view images, enhancing the company's capabilities in 3D modeling and analysis.</li><li>• Collaborated with Java experts to integrate AI-driven controls into a project managing the <b>xArm-6</b> robot arm via TCP/IP, utilizing the <b>OAK-D</b> camera and <b>DepthAI</b> library for precise automation.</li></ul> |                                    |                           |                          |
| <b>Research Assistance, PerCV Lab.</b>   | <b><u>Kyung Hee University</u></b> | <i>South Korea</i>        | <b>08/2014 - 02/2021</b> |
| <ul style="list-style-type: none"><li>• Conducted advanced research in <b>3D Reconstruction</b>, <b>Depth from Focus</b>, and <b>Face Detection</b> utilizing both AI-based and conventional methods, contributing to the academic field of knowledge with several peer-reviewed <b>publications</b>.</li><li>• Led the development of a 3D model reconstruction process for dental structures from <b>medical imaging</b> devices, employing parallel programming with OpenMP in C/C++ to improve processing efficiency.</li><li>• Developed and implemented <b>depth estimation</b> methods using 3D Convolutional Neural Networks (<b>3D-CNN</b>) and hybrid <b>CNN + LSTM</b> architectures, advancing depth perception technologies.</li></ul>  |                                    |                           |                          |

## Education

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|--|------------------------------------|--------------------------|--------------------------|
| <b>PhD in Computer Science</b>   | <b><u>Kyung Hee University</u></b> | <i>Republic of Korea</i> | <b>08/2014 - 06/2021</b> |
| <ul style="list-style-type: none"><li>• Perception and Computer Vision Lab. Thesis: 3D Reconstruction from Ordered Differently Focused Image Set</li></ul> |                                    |                          |                          |

## Awards

- **Best Paper Award**: Journal of the Korean Information Science Society (2016)
- **Presidency Scholarship**: Kyung Hee University, during M.Sc. & Ph.D. study (2014-2018)
- **2<sup>nd</sup> place**: Olympiad in Informatics, Uzbekistan (2010)
- **3<sup>rd</sup> place**: 10th Russian Olympiad in Informatics and Programming (2009)