Nikita Cherniadev

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Experience

- **Nvidia** Nov 2024 – Present
  Senior Simulation Engineer *MuJoCo, Isaac Sim, Isaac Lab, Python, Omniverse, USD*
  - **Overview**: Senior Simulation Engineer at the Generalist Embodied Agent Research (GEAR) group led by Dr. Jim Fan and Prof. Yuke Zhu, focused on building foundation models for embodied agents across virtual and physical environments. Responsible for simulation infrastructure supporting large-scale data generation, training, and evaluation of multi-task agents.
  - **GR00T N1**: Led simulation infrastructure design and scaled data collection pipelines in MuJoCo and Isaac Sim for GR00T N1, enabling training and evaluation of foundational embodied-agent models.
  - **Sim-and-Real Co-Training**: Developed an extensible simulation API to automate policy evaluation across simulated and real-world environments, built on top of RoboSuite.
  - **Simulation Infrastructure**: Collaborated with internal simulation teams to implement environments in Isaac Sim and Isaac Lab, and to manage and distribute USD assets. Built conversion pipelines and tools for automated asset authoring, management, and physics validation.

- **Dyson** Aug 2023 – Sept 2024
  Senior Simulation Engineer *MuJoCo, Unity, VR, Python, C#*
  - **Overview**: Senior simulation engineer at the Dyson Robot Learning Lab (DRLL) managed by Stephen James, collaborating with research scientists, Xiao Ma, Mohit Shridhar, Younggyo Seo. DRLL was an industry research lab advancing robot intelligence through efficient reinforcement and imitation learning using human demonstrations and autonomous exploration.
  - **BiGym**: Led development of BiGym: a MuJoCo-based benchmark for mobile bi-manual robotic manipulation. Features 40 tasks, 6 control modes, state/RGB/depth observations, and a VR module for human demonstrations. Open-sourced code and dataset with 3,000+ human demos available on GitHub.
  - **MuJoCo Simulation**: Developed two MuJoCo-based simulation solutions, for sim-to-real projects focused on mobile robotics and manipulation.
  - **Unity Simulation**: Led development of a general Unity-based gym environment for robot learning.
  - **Robot Learning**: Contributed to development of the general robot learning package, RoboBase implementing the DRM reinforcement learning algorithm.

- **Sber** Oct 2021 – July 2023
  Senior Unity Developer *Unity, Zenject, gRPC, Jenkins, VR, C#*
  - **Overview**: Senior Software Developer at Sberbank, leading the development of the VR training simulator for cash-in-transit (CIT) security personnel. Based on the Unity Game Engine for HTC Vive Pro headset with custom VR controllers. Deployed the system across 11 regional bank departments, achieving over 8,000 active users.
  - **Training Scenarios**: Developed 15 training scenarios for CIT security guards to test and improve core skills: risk assessment, concentration, and shooting.
  - **Custom Scenarios**: Developed a system that enables instructors to create custom training scenarios on-demand using an in-game editor.
  - **NPC Behaviour**: Developed a modular system for designing behaviors for NPCs based on Finite State Machines (FSM), incorporating motion matching and Inverse Kinematics (IK) animations.
  - **Analytics**: Integrated the simulator with the bank's authorization and analytics system using gRPC.
  - **CI/CD**: Implemented Jenkins CI/CD pipelines on the bank's intranet in collaboration with the DevOps team.

- **Native Robotics** Jan 2019 – Sept 2021
  Co-founder, Lead Unity Developer *Unity, JSON-RPC, AR, VR, Python, C#*
  - **Overview**: Co-founded and led technical development at Native Robotics, a startup specializing in online programming solutions for industrial robots.
  - **Architecture**: Led the development of the software architecture for the Omni Kit: a robot-agnostic simulation and control framework based on the Unity Game Engine and Python. It enabled FSM-based control of industrial robotic systems, supporting simulation of robot programs and real-time execution on physical robots.

- **Omni Pack**: Led development of a real-time control app for industrial palletizing robots, supporting visual re-programming and integration with multiple brands like Universal Robots, KUKA, and Kawasaki. Optimized for Intel NUCs running Linux-based OS.
- **Omni Fit**: Led development of Omni Fit, an AR application for realistic and interactive showcases of robot systems. Built for iOS and WebGL platforms.
- **CI/CD**: Implemented CI automation using GitHub Actions.
- **Leadership Skills**: Managed a team of 7 developers using the Agile framework.
- **Business Development**: Attracted EU distributors, securing over 20 international distributors in total.

- **VR Quest** June 2016 – Feb 2018
  Lead Unity Developer *Unity, UNET, VR, C#*
  - **Overview**: Led technical development at VR Quest, a start-up focused on building commercial VR experiences. Developed several 60-minute-long multiplayer experiences within strict 6-8 month deadlines per game. The most popular escape rooms, "Ice Valkyrie" and "Minority Report", were available in over 20 locations in Germany and Russia. These experiences were built using the Unity Game Engine for Oculus VR headsets (DK2, Rift CV1) and Leap Motion controllers.
  - **Multiplayer**: Implemented local multiplayer for 2-4 players using UNET networking. Developed screen-streaming functionality for the escape room administrator.
  - **Analytics**: Developed an authorization and analytics system integrated with Google Docs.
  - **Leadership Skills**: Managed a team of 5 developers using the Agile framework.
  - **Business Development**: Represented the company at conferences in Russia, Germany, and Poland. Provided technical support to clients in the EU.

Education

- **Skolkovo Institute of Science and Technology** Sept 2018 – June 2020
  Master of Science in Information Systems and Technologies *GPA: 4.00 (5.0/5.0)*
  - **Thesis**: Development of the Framework for Simulation and Real-Time Control of Adaptive Robot Cells.
  - **Achievements**: Honors List, Best Entrepreneurship Spirit Award, Academic Excellence Award.

  Projects:
  - **MirrorShape**: High Fidelity Large-Scale Shape Rendering Framework for Virtual Reality
  - **RVR**: Remote Programming of Industrial Robots

- **Bauman Moscow State Technical University** Sept 2014 – June 2018
  Bachelor of Science in Robotics and Mechatronics *GPA: 3.707 (4.8/5.0)*
  - **Thesis**: Mixed Reality Remote Control System for Industrial Robots.
  - **Achievements**: Honors List.

Publications & Awards

- **GR00T N1: An Open Foundation Model for Generalist Humanoid Robots** 2025
  NVIDIA
- **BiGym: A Demo-Driven Mobile Bi-Manual Manipulation Benchmark** 2024
  Nikita Cherniadev, Nicholas Backshall, Xiao Ma, Yunfan Lu, Younggyo Seo, and Stephen James.
- **MirrorShape: High Fidelity Large-Scale Shape Rendering for Virtual Reality** 2019
  Aleksey Fedoseev, Nikita Cherniadev, and Dzmitry Tsetserukou.
- **Startup Village Competition** 2020
  2nd place with Native Robotics startup, winning a $30,000 prize.
- **Intel ISEF Los Angeles, CA** 2014
  Finalist, recognized with special awards: AIPLA First Prize, CAST First Prize.

Skills

- **Programming Languages**: Python, C#, C/C++
- **Tools and Frameworks**: Unity, .NET, MuJoCo, Git, Docker
- **Applications**: Blender, Autodesk 3ds Max, Autodesk Inventor, Matlab Simulink