

## Principal Mechanical Robotics Engineer

At ATDev we are creating an ecosystem of mobility devices to enable independence for the elderly and disabled, no matter their level of physical ability. Over 15 million people require in-home care due to physical disabilities and the need for home care is expected to double by 2040 as the average age of populations around the world increases. Along with rising costs, there are not enough caregivers to meet these demands. We are developing unique robotic mobility systems to meet the world's growing needs.

To change this, ATDev - together with leading academic and industry partners - is creating **RAMMP**, the *Robotic Assistive Mobility and Manipulation Platform*, powered by **ATOS**, an open-source assistive technology operating system, and **RAMMS**, a high-fidelity digital twin and simulation environment. This platform will serve as the foundation for future assistive mobility robots, advanced manipulation systems, and next-generation AI-enabled autonomy capabilities.

We are seeking a **Principal Mechanical Robotics Engineer** to serve as the **technical authority for mechanical architecture and design** across ATDev's current and future robotic products. This role is responsible for defining **mechatronic architectures**, directing product development and research efforts, and leading the translation of advanced robotic designs into safe, reliable, and deployable medical devices and products.

This role sits above Senior and Staff engineering roles and is expected to shape **long-term mechanical robotic system** design across ATDev's commercial offerings and the RAMMP platform.

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### Role Overview

The Principal Mechanical Robotics Engineer owns the **end-to-end mechanical system architecture** for ATDev's products and robotic platforms. They will:

- Define the **mechanical architecture** for robotic systems
- Guide Senior and Staff engineers responsible for subsystem design and implementation
- Coordinate with controls, electrical and firmware engineers on sensing, actuation and control subsystems

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### Key Responsibilities

#### Mechanical Architecture

- Define and evolve the **mechanical system architecture** for:
  - robotic mobility platforms (wheelchair bases, legged/wheeled hybrids)
  - manipulation systems and end effectors
  - dynamic seating and stabilization systems
  - future robotic assistive devices
- Establish architectural principles for:
  - Modularity / componentization
  - Repair, maintenance, and upgrade
  - Sensing and controls
- Specify interfaces between mechanical subsystems, electronics, and firmware components.

#### Sensing, Actuation & Hardware Integration

- Lead system-level design and selection of:
  - Actuators, electric motors, and transmissions
  - series elastic and compliant actuation
  - power electronics and motor drives

- inertial, proprioceptive, and exteroceptive sensors
- Develop and validate actuator and sensor models for use in **simulation** and real-time control.
- Ensure sensing and actuation designs support advanced autonomy, learning-based control, and safety requirements.

## Technical Leadership & Mentorship

- Provide technical leadership to Senior and Staff Mechanical, Robotics, and Controls engineers.
- Review system designs, control systems, and experimental results.
- Establish best practices for system architecture, design, and management.
- Serve as a key technical advisor to leadership on feasibility, risk, and long-term system evolution.

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## Required Qualifications

- **PhD** or equivalent experience in Mechanical Engineering, Robotics, or a closely related field.
- **7+ years** of experience in robotics, product design, or mechatronics system development.
- Strong background in **mechanical engineering**, with experience managing the design of complex assemblies and subsystems.
- Prior experience acting as **technical lead** for products or research projects in medical devices or other safety-critical domains.
- Experience collaborating across mechanical, electrical, and software teams

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## Breadth of Technical Experience (Preferred)

- Mechatronic system design and integration
- Motor drives, power electronics, and actuation systems
- Experience designing and implementing control systems

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## Why This Role Matters

The Principal Mechanical Robotics Engineer defines *how ATDev's robots are designed and operate*. From structure, compliance, and actuation to stability and safety, this role ensures that ATDev's products and robotic platforms are not only functional, but **physically capable, reliable, manufacturable, and repairable**.

This is a rare opportunity to shape the mechanical foundations of an open, next-generation assistive robotics platform and product lines that will directly improve independence and quality of life for people with disabilities.

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## Why Join Us?

- Work on a mission-driven project that will dramatically improve independence and autonomy for people with disabilities.
- Contribute to a groundbreaking open-source ecosystem for assistive robotics.
- Collaborate with world-leading robotics research institutions and engineers.
- Help build a unified, scalable platform that will shape the future of assistive robotic mobility and manipulation.

**To apply: send cover letter, resume, and portfolio/website (if available) to [apply@assistivetech.dev](mailto:apply@assistivetech.dev)**