

# Arvind Bhallamudi

Designer, Researcher, Strategist

Boston, MA

| arvindbhallamudi.com

| arvindb.work@gmail.com

My practice integrates research, design, and development of responsible materials, products, processes and ecosystems; crafting stories and experiences centered around human and planetary health.

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## Education

### Master of Industrial Design (MID)

Rhode Island School of Design (RISD), Providence, RI

Thesis: Fungi in Flux, Designing Regenerative Materials and Products with Mycelium

Sep 2021 – June 2023

### Bachelor of Technology, Mechanical Engineering (B.Tech)

Symbiosis Institute of Technology, Pune, India

Final Project: Glaucoma Screening Device for Early Detection of Eye Diseases

Aug 2015 – Dec 2019

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## Work Experience

### Design Strategist, Big Dreams Studio

Providence, RI · Full-time

Oct 2023 – Present

Worked closely with the CEO, production managers, director of strategy, director of design, internal teams and external partners for the startup's visioning, offerings, and 11 commercial projects with various public/private organizations.

#### Rhode Island Foundation

- Currently working with the executive team at Rhode Island Foundation (RIF) to improve cross-sector partnerships, advocacy, programming and capacity building for 50 non-profit organizations in the state.
- Leading the ecosystem research, communication strategy, experience design for a two-day convening session to engage 400+ participants recommending long-term impact metrics, and a platform to share knowledge.

#### Possibility Ocean 2025

- Conducted qualitative interviews with ocean technologists in New England and researched the drivers of change, 50+ emerging trends, and future contexts for marine technologies and created a STEEP report.
- Currently working with a group of 30+ marine biologists, ecologists, entrepreneurs, policymakers, educators to understand the role of integrated data management in offshore energy, aquaculture, tourism and trade.

#### Xcimer Energy Corporation

- Researched the technologies and communications of 12 magnetic fusion energy (MFE) and inertial fusion energy (IFE) startups, and developed science-based language and tone for Xcimer's brand messaging.
- Worked with the strategy director to craft the company's mission statements and simplified the system architecture representations to articulate the working arrangement of Xcimer's laser, target and chamber.
- Led the competitive positioning and differentiation through a compelling content, chaptered narratives, collaborating to design and launch a website, investor decks, data visualizations and infographics.

#### Collins Aerospace

- *Wingwalker*: Conducted 7 qualitative interviews with pilots, marshalls, turn coordinators and operators to discover market potential to reduce wingtip collisions and improve efficiencies in ground operations. Led the thematic analysis and synthesis of the learnings, and visually mapped insights to highlight user needs.
- *AIX Accessibility*: Worked with the design team and clients to research, design, develop and launch a mobile app for passengers and a tablet app for flight crew with speech and sign language recognition, and custom controls and interactions, for sending service requests through a proprietary computer vision tool.

#### Overproof Data

- Led the qualitative research, conducting 8 interviews with CEOs, regional managers, and salespeople of food and beverage brands, streamlining user segment requirements and bottlenecks in the software.
- Created user journey maps, UI component libraries, UX workflow developments, and overall system designs for the software to recommend personalized AI-driven route-to-market plans for regional and national sales targets.

#### Rhode Island Rebound (RIR 2023-24)

- Supported the positioning, digital marketing and web development for 4 small businesses in Rhode Island: Mathilde, Paper Connection International, Dance Theater of Rhode Island, and Heart Chiropractic and Wellness.
- Led the communication strategy, web design and Wordpress development for Paper Connection, creating an approach for listing products through systematic filter options, and improving user experience in the shop.

**Principal Investigator, MycoType Materials****June 2023 – Present**

Boston, MA · Full-time

- As a continuation of my Master's thesis, MycoType was founded as a venture to utilize local waste streams with fungi to biofabricate raw materials and products that are carbon-negative, non-toxic and biodegradable.
- Multiple biomaterial formulations and prototyping processes are offered as a means to work with mycelium (the root-structure of fungi) as functional and structural materials for growing sustainable objects.
- A series of workshops and lectures were conducted at the Rhode Island School of Design, Brown University, NMIMS School of Design, and Autodesk Research Connections, Boston.

**Grant Writer, Biodesign Challenge****Apr 2024 – May 2024**

Remote · Contract

- Collaborated with the executive director and program manager to understand and articulate a narrative for the nonprofit's vision, mission, goals and programs to accelerate biodesign and biotechnology learning.
- Successfully drafted, proposed and obtained funding from the STEM Action Grant 2024, worth \$5,000.
- Proposed funding opportunities from both federal and corporate donors, creating a list of 60+ potential grants primarily from the National Science Foundation (NSF).

**Environment, Climate and Sustainability Liaison,  
RISD Division of Architecture and Design****Feb 2023 - May 2023**

Providence, RI · Part-time

- Organized on-campus events, and worked with climate-based student groups and clubs to promote, align and accelerate sustainability practices and projects across departments.

**Assistant Curator, RISD x Hyundai Sustainable Futures Exhibition****Aug 2022 - Nov 2022**

Providence, RI · Part-time

- Led a team of six to design the spatial layout of the exhibition, build visual systems, graphic designs and posters, and managed participant logistics for 20+ exhibits, and carried out the execution and launch.
- Crafted the vision and written collateral and narratives for five exhibition themes: Immerse, Observe, Discover, Forge, Deconstruct; applying sustainability perspectives to various sections across the venue.

**Founder, Dimiour Design****Sep 2019 - Aug 2021**

Mumbai, India · Full-time

- Formed a six-person team and venture providing services in mechanical design and 3D printing, and built systems for operations, sales and marketing from scratch, exploring the market for opportunities.
- Launched distance learning 3D printing education, in a series of three online workshops in partnership with Imaginarium and Autodesk India, delivering 3D printed parts to 34 registered students in a certified course.
- Successfully completed 50+ projects for startups, brands and individuals, helping design, fabricate and deliver 600+ parts across India, along with other mechanical engineering and CAD projects.

**Freelance Designer, National Institute of Interdisciplinary Science & Technology****June 2019 - Sep 2019**

Trivandrum, India · Contract

- Developed the spatial layout, enclosures and developed CAD models for 4 units: 3D printing, molding, melting, and sand-reclamation in an IoT-based SMART foundry that can be operated by 1-2 people.
- Created an intuitive, multi-purpose dashboard to track, control and optimize the unit workflows to reduce errors, improve throughput and turnaround efficiency, and access safety features of the system.

**Mechanical Engineering Intern****Jan 2018 - July 2018****Biomedical Engineering and Technology Innovation Center, IIT Bombay**

Mumbai, India · Full-time

- Worked with different teams of doctors and engineers to research, develop, fabricate and clinically test three biomedical devices: a lower-limb prosthesis, a heart valve surgery tool, and a glaucoma diagnosis device.
- **Glaucoma Screener:** Created a novel, head-mounted device that is convenient, accurate and portable, and can be used to check IOP (intraocular pressure), preventing deterioration in eye-related diseases.
- **Transfemoral Prosthesis:** Supported the team with the design and manufacturing of a parametric prosthesis, comparing conventional Plaster-of-Paris (PoP) sockets, with the developed parametric, 3D printed ones.
- **Heart Surgery Tool:** Developed and fabricated a tool to check aortic valve diameters and cut the pericardium tissue to make artificial valves, successfully used in 15+ open heart surgeries at Fortis Hospital, Mumbai.

**Product Design Intern, Shenoy Studio, IDC School of Design, IIT Bombay****June 2017 - July 2017**

Mumbai, India · Full-time

- Co-created a 60% lighter and eco-friendly 'cane palanquin' (rattan palanquin) with local craftsmen for pilgrim porters at Vaishno Devi that reduces the load, improves mobility and enables locally skilled employment.

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## Teaching Experience

### Graduate Instructor, RISD CoWorks Research Lab

Sep 2022 - May 2023

Providence, RI · Part-time

- Conducted 100+ trainings and consultations for team members, students and faculty on 3D printing, laser cutting and vacuum forming in the makerspace, and managed routine lab maintenance and checks.
- Created a comprehensive 20-page resource guide for using, maintaining and optimizing operational workflows from CAD to slicing to post-processing at four 3D printing stations: FDM, SLA, Ceramic and Paste.

### Teaching Assistant, RISD Global Biodesign NYC

Jan 2023 - Feb 2023

New York City, NY · Full-time

- Assisted with course planning, curriculum design, and organization during a five-week Wintersession travel course at New York City and conducted a session on designing fungi and algae-based materials.
- Learnt biotechnology insights visiting experts at renowned companies and labs including Ecovative, Keel Labs, SVA BioArt Lab, Material Connexion, BioBAT Art Space, Biofabricate and more.

### Technical Assistant, RISD x Hyundai Tech Landscapes Studio

Feb 2022 - May 2022

Providence, RI · Part-time

- Supported participants in Tech Landscapes studio with various sensing and media equipment: macropods, drones, microphones, GPS and weather station used for measuring environmental impacts in projects.

### Biomaterials Instructor, RISD Edna Lawrence Nature Lab

Feb 2022 - May 2022

Providence, RI · Part-time

- Conducted weekly trainings for students, faculty and staff; experimented with multiple biomaterial formulations, and designed a labelling system which was applied to the material library of 100+ materials.
- Assisted faculty and students in the Digital Ceramics Studio and Foundation Studio through 3D printing and biomaterial formulation workshops, along with mentorship for their projects.

### Graduate Assistant, RISD Industrial Design Department

Sep 2021 - Dec 2021

Providence, RI · Part-time

- Conducted trainings for 3D printing and laser cutting, created spatial layouts of the studio and makerspace, and assisted the graduate department head and graduate students in various programs.

### Design Educator, Curiosity Gym

Mar 2020 - May 2021

Mumbai, India · Full-time

- Created and conducted courses, workshops and mentorships on design thinking, product design, 3D modeling and 3D printing for 500+ K-12, undergraduate and graduate students at prestigious schools.
- As the design lead, I created and maintained the website interface and experience, and built digital marketing campaigns that boosted traffic across channels, achieving 1st page SEO rankings on Google search.
- Built science exhibits including a double pendulum to demonstrate chaotic motion, a harmonograph based on a 3D-printed gimbal, and created COVID-19 kits and equipment donated to hospitals during the pandemic.

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## Patents and Publications

### Headgear Ophthalmic Device

2020

Symbiosis International University and IIT Bombay, India

#WO2020141499 *International patent published (WIPO)*

### Multi-Directional and Multi-Functional Lighting Assembly

2019

Dimiour Design Studio, Mumbai, India

#201921050663 *Indian patent granted*

### International Conference on Research into Design, Springer: Design for Tomorrow, Vol III

2020

IDC School of Design, IIT Bombay, India

*Proceedings "Design and Prototyping of a Head-Mounted Ophthalmic Device for Monitoring Glaucoma"*

### Conference on Indian Patents, Copyrights, Innovations and Startups

2020

Pimpri Chinchwad College of Engineering And Research, India

### National Conference of Indian Association of Assistive Technologists

2018

Bhubaneswar, India

*Proceedings "Parametric Design and Hybrid Fabrication Process of Above-Knee Prosthesis"*

## Skills

### Research Methods

Ethnographic Research | Qualitative Analysis | Usability and Heuristics | Participatory Design | Market Research | Data Analysis | Visualization and Synthesis | Mind Mapping | Copywriting | Stakeholder Communications  
*Miro · Notion · MS Office · Google Analytics*

### Industrial Design Engineering

Sketching | CAD | CAE | Rendering | Mechanical Design | Rapid Prototyping | 3D Printing | CNC Machining  
3D Scanning | Laser Cutting | Molding | Vacuum Forming | Circuit Design and Microcontrollers  
*Solidworks · Fusion360 · Rhino · Blender · Meshmixer · Cura · Arduino IDE · Keyshot*

### Digital Experience Design

Information Architecture | Storyboarding | Wireframing | Interface Design | Interaction Design | Web and App Design  
Performance Testing | A/B Testing | Branding | Digital Marketing (SEO, SEM, SMM)  
*Adobe Suite · Figma · Wix · Wordpress · Shopify · Audacity · Ableton Live*

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## Community and Volunteering

### Research Volunteer, Biodesign Challenge

Aug 2023 - Dec 2023

Providence, RI · Part-time

- Developed a resource library of 200+ research papers, articles and learning resources across industries of energy, materials and food, focusing on biologically-inspired climate solutions, and highlighting key insights.

### Finance Manager, RISD IDSA Chapter

Feb 2022 - June 2022

Providence, RI · Part-time

- Managed event logistics, budgets, bills of materials and partnerships, working with the RISD IDSA team to execute 'RISD Make-a-thon' 2022, a one-day hackathon focused on making creative objects.

### Founding Member, Design X Health

Nov 2021 - Dec 2022

Providence, RI · Part-time

- Worked with RISD, Brown University and Alpert Medical School, managed industry partnership projects, with RI Department of Corrections for opioid rehabilitation, leading the design and launch of a resource website.

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## Honors and Awards

### Contributing Expert, EcoLaunch Accelerator

Nov 2024 - Present

Part of 70+ experts creating an educational program for nature-tech entrepreneurs.

### Speaker, Autodesk Research Connections

Aug 2023

Presented mycelium material research at Autodesk Boston to various teams.

### Principal Investigator, Somerson Sustainability Innovation Fund

Sep 2022 - June 2023

Awarded \$8,500 for researching the potential of mycelium materials in education.

### Principal Investigator, Mark Harrison Grant

Sep 2022 - June 2023

Awarded \$3,000 for mycelium research and biomaterial fabrication equipment.

### RISD Design Research Award, Industrial Design Department

June 2023

### Speaker, Brown-RISD Innovation Community (BRIC)

Nov 2022

### RISD Fred M Roddy Scholarship

Mar 2022

### RISD Fellowship

2021-22, 2022-23

### Corona Design Challenge Award, IDC School of Design

May 2020

### Most Distinguished Paper Award

Dec 2020

International Conference on Research into Design (ICoRD), IDC School of Design.

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## Languages

English (Full Proficiency), Hindi (Fluent), Telugu (Spoken)