The Roux Institute
Northeastern University

Partnership overview

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Northeastern University is the World Leader in Experiential Learning & Enterprise Collaboration

#44
Overall Ranking
(out of 443 U.S.
Universities)

#1
in Experiential Co-
ops and
Internship Programs*

#12
Most
Innovative
Universities*

$180M+
External Research
Funding
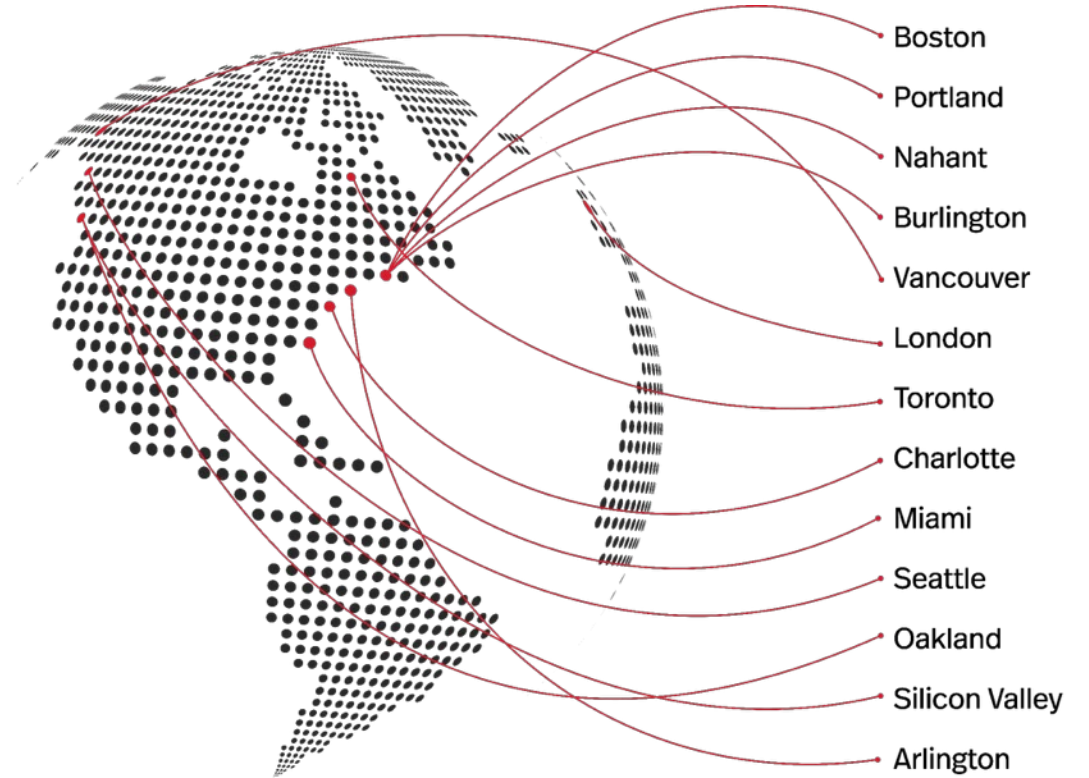
$1.5B+
Educational and Research
Endowment

3,500+
Corporate Partners Across
NU Worldwide Experiential
Network

13
Global
Campuses

9
Interdisciplinary
Institutes

Boston
Portland
Nahant
Burlington
Vancouver
London
Toronto
Charlotte
Miami
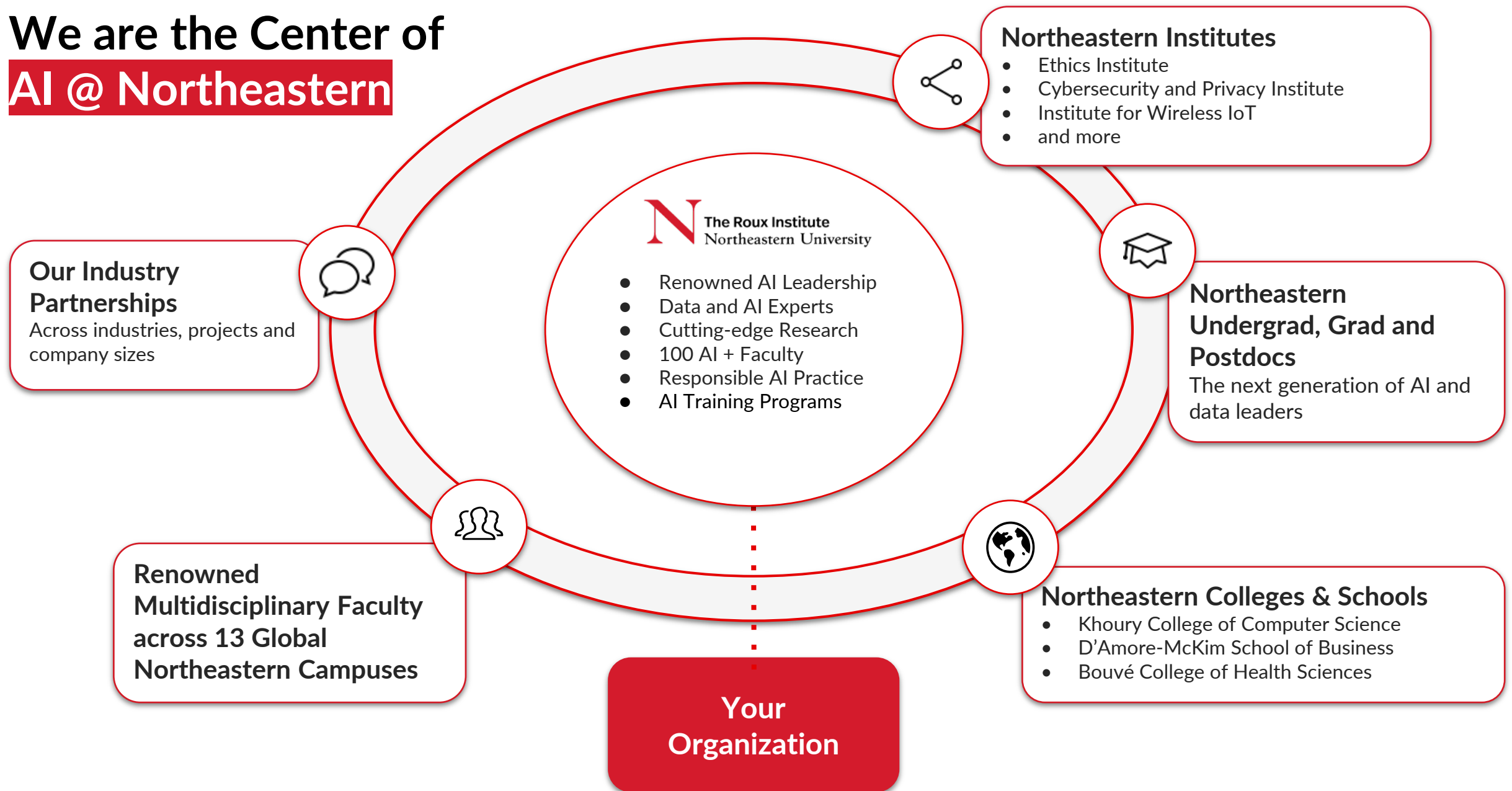Seattle
Oakland
Silicon Valley
Arlington

Northeastern University's Roux Institute operates as a tech talent and innovation hub for New England and beyond, driving bold innovation at the intersection of tech, data, and the life sciences.

We are the Center of
AI @ Northeastern

The Roux Institute
Northeastern University

- Renowned AI Leadership
- Data and AI Experts
- Cutting-edge Research
- 100 AI + Faculty
- Responsible AI Practice
- AI Training Programs

Northeastern Institutes
- Ethics Institute
- Cybersecurity and Privacy Institute
- Institute for Wireless IoT
- and more

Our Industry Partnerships
Across industries, projects and company sizes

Northeastern Undergrad, Grad and Postdocs
The next generation of AI and data leaders

Renowned Multidisciplinary Faculty across 13 Global Northeastern Campuses

Northeastern Colleges & Schools
- Khoury College of Computer Science
- D'Amore-McKim School of Business
- Bouvé College of Health Sciences

Your Organization

The Roux Institute
Northeastern University

Together, we're building the world's most **powerful opportunity engine**.

407 alumni
722 graduate students

4,584 partner employees and community members trained

95 portfolio start-ups

656 co-ops recruited by 129 employers

$34.8M in funded research

We have a bold vision for the **future**.

Accelerate your progress with access to innovative
talent, training, and technology .

| CO-OPS | LEARNING & DEVELOPMENT | AI SOLUTIONS | RESEARCH | ENTREPRENEURSHIP |

Build a tech talent pipeline with graduate-level co-ops

Northeastern's signature co-op programs bring the next wave of tech talent to your organization as they complete their graduate-level training in fields such as AI, data science, and bioengineering.

Advance your team with custom training built to impact your business

Our applied approach to employee learning & development means courses are designed to teach both technical and non-technical employee groups how to apply data and AI skills directly to their specific roles in order to drive business results.

Drive your organization forward with responsible AI

Our team of AI science and ethics experts at the AI Solutions Hub engage with organizations to help them harness the power of the world's most advanced technologies while mitigating risk.

Discover innovative solutions with custom research

The experts at Northeastern's R1 research enterprise partner with organizations to find advanced solutions to their most challenging problems using human-data interaction, engineering, computational medicine, and experiential AI.

Tap into tomorrow's breakthrough companies

The Roux is where today's leaders connect with tomorrow's innovators. Our accelerators and incubators serve as strategic launchpads, fostering partnerships and breakthrough ventures that drive meaningful impact and help reshape the future.

Our learning programs transform how teams work

From strategic executive education to advanced technical courses and introductory workshops for functional teams – **we bring experiential learning into your entire organization to drive your business outcomes**.

Experiential learning is the best way to change behavior.

Leveraging experiential learning
to develop skills in the flow of work

Our Approach: Co-design to incorporate *company-specific*

projects, data, and tech into our learning experiences

Our Delivery: *Live, interactive, cohort-based* training

programs aligned to organizational strategy and needs

The Result: Development of *technical and critical thinking*

skills that can be immediately and practically applied

85%
Learners Report
Improved Job Performance

3,500+
Employees
Served

LVX
VERITAS
VIRTVS
N

Learning Pathways*
*Details subject to change

Accelerating Insights — Bangor Savings Bank — POWERED BY Northeastern University

	Introduction to Data + AI	Foundations in AI + Analytics	Advanced Analytics	Machine Learning	Data Strategy + AI Leadership	Electives
Pathway Description	An introduction to key data concepts, specially built for employees who are key to inputting customer data	Learning key analytics and AI concepts and their importance to your role and the organization	For individuals who actively work with data and are seeking to develop skills in data visualization, ethics, and AI tools	Most rigorous pathway to learn data science skills including machine learning models, responsible AI principles, and more	For leaders developing an organization-wide data strategy and staying up to date on the role of AI in their industry	Optional Courses for those seeking to advance their analytical skills set
Example Employee Roles	Tellers, Customer Service Specialists, Support Teams, Operations	Most employees: Business Partners, Branch Managers, Operations departments managers	Employees with/obtaining a Cognos Analytics license, and analyst job functions	Data Engineers	Leadership Committee members and some business line and technical leaders	Learners who have completed the Advanced Analytics pathway
Appx. # of Employees	250	650	130	10	30	
# of Learning Hours	5	7	12	46 - 53	14	8 - 20
Course List *Subject to change*			Prerequisite: Attend(ed) Cognos training or have prior experience	Prerequisite: Foundations in Python for Scaling Data Analysis		
	Intro to Accelerating Insights (Self-Paced & Pre-Recorded)	Intro to Accelerating Insights (Self-Paced & Pre-Recorded)	Maximizing Productivity with Generative AI	Maximizing Productivity with Generative AI	Intro to Accelerating Insights (Self-Paced & Pre-Recorded)	Empowering Self-Service Data Warehouse Access with SQL
	Maximizing Productivity with Generative AI (2-Part Series)	Maximizing Productivity with Generative AI	Communicating Effectively with Data Visualizations	Building AI Data Models **OR** Ensuring Data Quality & Compliance through Governance	Maximizing Productivity with Generative AI	Foundations in Python for Scaling Data Analysis
	Foundations in Data Literacy (Self-Paced & Pre-Recorded)	Enhancing Decision Making with Analytics	Establishing RAI Governance and Data Ethics	Achieving Reliability via Machine Learning Operations	Developing an Organizational Data Strategy	
				Foundations in RAI Architectures: Tools, Metrics, and Audits	Establishing RAI Governance and Data Ethics	
				Optional: Intro to Retrieval Augmented Generation (RAG)	AI Updates	
				Optional: Applied Topics in Natural Language Processing (RAG)		

What is Experiential AI?

AI with a human in the loop.

The goal of Experiential AI is to make machines work with humans in order to assist machine intelligence, and to use machine intelligence to extend human intelligence.

Partnerships

Our engagement model follows a recognizable Fee-for-Service format, except at our disposal is the large and multifaceted resources only Northeastern University can provide. Our solutions can include:

- Using our team of students, data scientists and industry experts to scope applied projects and deliver custom solutions
- Working with company leadership to evaluate the state of AI at your company and prioritize initiatives
- Leveraging students—undergraduate through postdocs—to help you build a data talent pipeline
- Creating a comprehensive Responsible AI framework to effectively integrate ethics into AI development and deployment
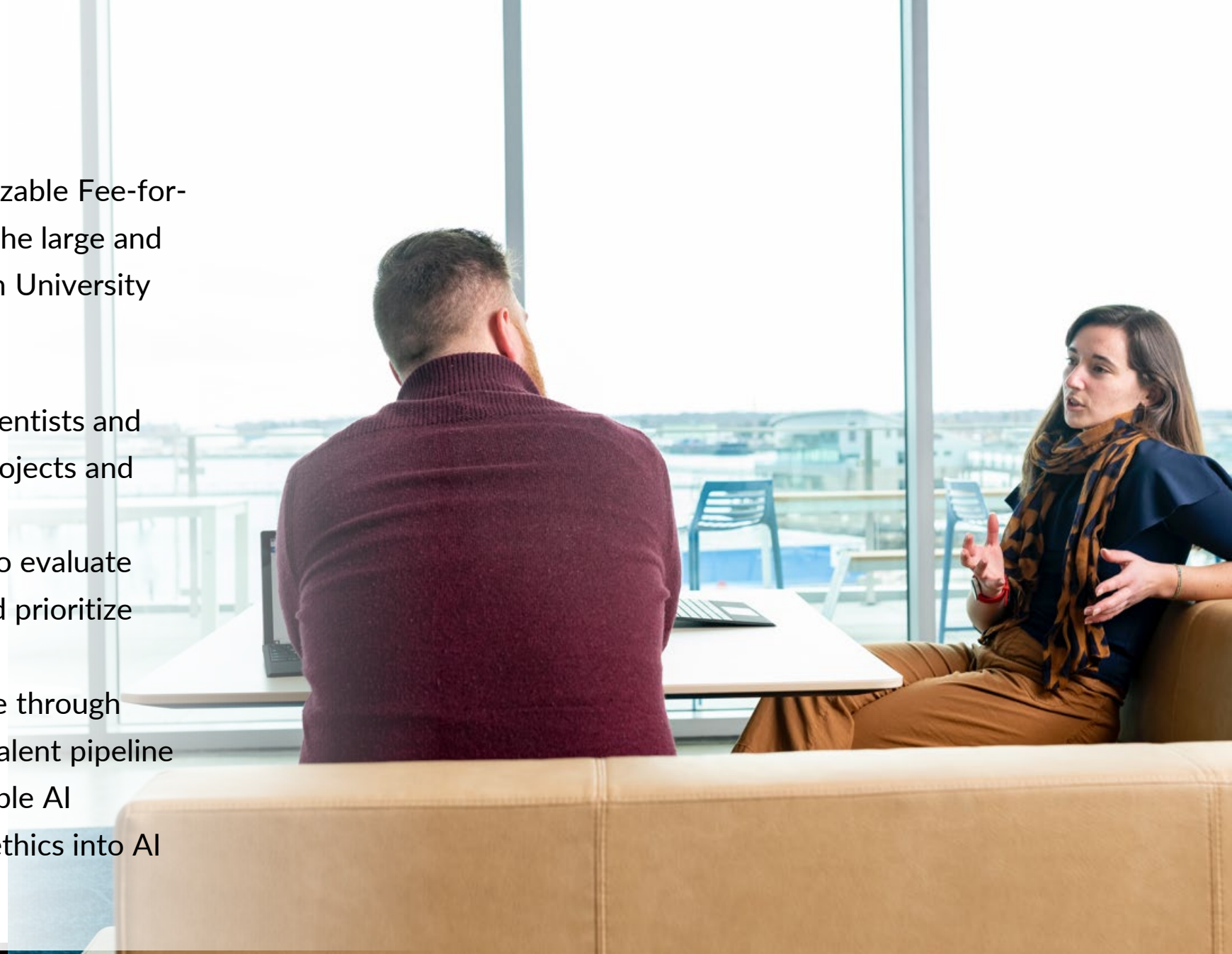
AI Solutions Hub: Delivering Data-Driven, Responsible AI Solutions to Pressing Challenges

A team of AI and data experts leveraging cutting-edge machine learning, AI, generative AI, research and data science to deliver responsible predictive and generative AI solutions at scale.

AI AND DATA SOLUTIONS

Our project delivery team of data and AI professionals work with partners to deliver solutions to pressing problems in real contexts.

- Generative AI
- Predictive AI
- Natural Language Processing
- Large Language Models
- Data Opportunity Roadmaps
- Experiential AI Upskilling
- Digital Transformation Strategies
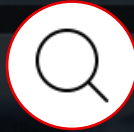
FOCUS VERTICALS

We leverage world-renowned Northeastern faculty and researchers to provide specialized solutions and research for all industries.

- Financial Services
- Insurance
- Telecommunications
- Manufacturing
- Health and Healthcare
- Life Sciences
- Climate and Sustainability
- And More

RESPONSIBLE AI SOLUTIONS

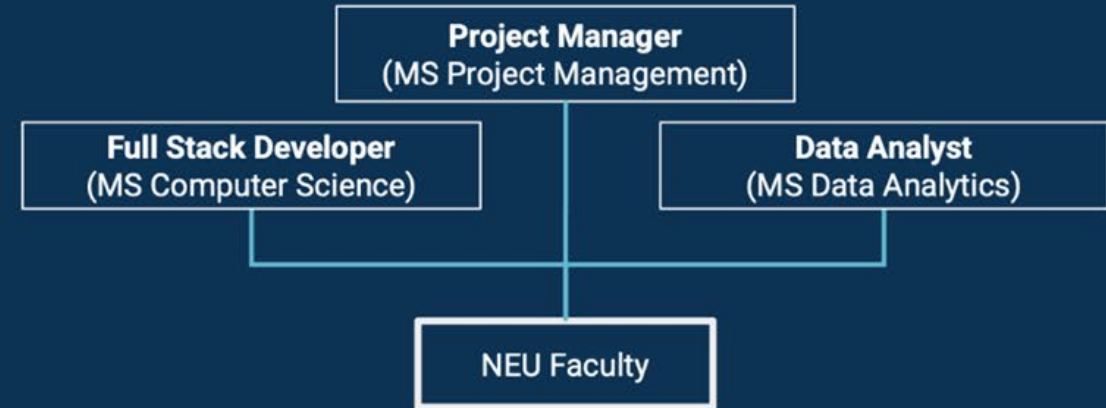Our Responsible AI practice and regulatory experts are integrated across projects.

- Responsible AI Roadmaps
- AI Ethics Analysis
- Responsible AI Strategies
- Responsible AI Solutions
- Privacy, Data and Compliance

Sample Team Scenarios

Objective:
Move data and KPI reporting to the cloud

Project Manager
(MS Project Management)

Full Stack Developer
(MS Computer Science)

Data Analyst
(MS Data Analytics)

NEU Faculty

Objective:
Custom AI chatbot for project estimating and sales

Project Manager
(MS Project Management)

Back-end Developer
(MS Computer Science)

AI Engineer
(MS in Artificial Intelligence)

NEU Faculty
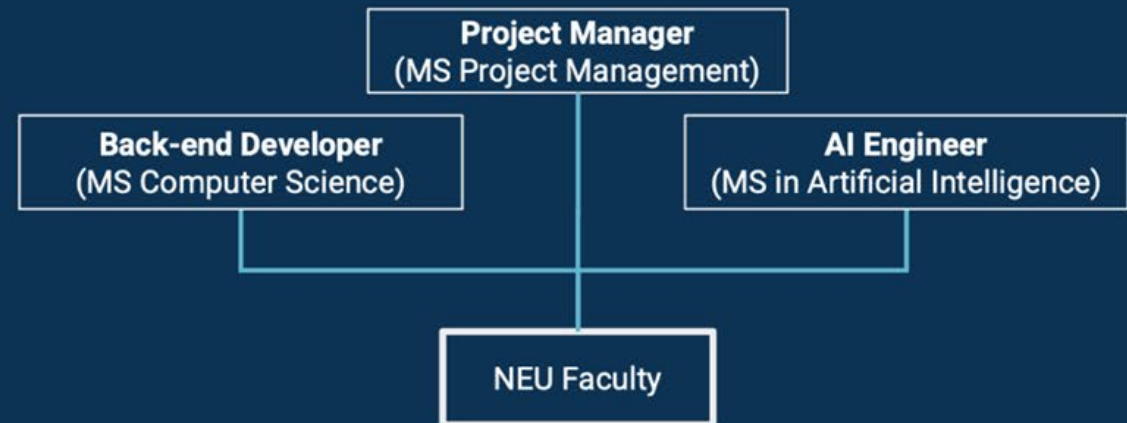
Current Work Examples

Verizon

Term: 6 months
Faculty: 1
Students: 6

Objective: Over the six-month experience, students are designing and developing a web-based application tailored to Verizon's internal specifications. They are:

- Conducting research on business needs, internal users, and impacted programs.
- Ensuring continued usability and maintenance beyond the program.

State Street

Term: 15-20 weeks
Faculty: 1
Students: 5

Objective: Over the six-month experience, students are designing and developing an automated dashboard (web application) based on State Street's identified KPIs. They are:

- Engaging with internal State Street SMEs in relevant areas.
- Building a scalable tool that can be expanded and supported internally.

Project Types

Construct a **Risk Assessment Framework** to apply to all AI initiatives at an international telco

Create an **optimization model** to increase manufacturing line efficiency for producer of high-end medical products

Build a talent pipeline of skilled data scientists for a global wireless carrier

Use publicly available social data to **create and deploy a fraud detection model** at a major insurer

Conduct **AI vendor evaluation** for a national public services company

Develop churn model and recommendations to reduce churn by at U.S. wireless carrier

Enable a growing bank to integrate a **360° view of their customer into their CRM**

Establish a **data governance framework** to save $22 million at a leading US insurance company

Increase **forecasting accuracy by 10% at a major US car manufacturer** using micro-market modeling

Populate an Ethics Board for AI and data leadership at global financial services leader

Success Stories

AI-Powered Recommendation Engine Enables Bangor Savings Bank to Better Serve Customers

✓ Team equipped with tools and training to use AI to best serve customers
✓ Model for increasing the utility of CRM with data-driven insights

Data Opportunities Roadmap & Practicum Generates Savings, Trains AI-Enabled Workforce at FullscopeRMS

✓ $100K saved in the first year of the partnership using new skills, workflows, and AI tools
✓ AI-enabled workforce

Data Opportunities Roadmap Identifies Opportunities for High-tech Manufacturer

✓ Identified 118 opportunities totalling over $31 million in ROI
✓ Prioritized by business impact

Partner Testimonials

"The EAI and Roux Institute team has been an incredible partner by seeking to understand what our needs are, then building an innovative solution that advances our approach to personal customer care and frictionless service. Their partnership has enabled us to execute our goal of deepening customer relationships through AI practices."

**Bob Montgomery-Rice,
President and CEO of Bangor Savings Bank**

"The world has witnessed rapid AI development over the last few months. However, putting AI to use is not an easy task, partially because there are a lot of unknowns and risks in AI. But the Responsible AI program we have now enables us to explore that in a way that is safe."

**Xuning Tang
Associate Director of Responsible AI, Verizon**

"Having cross-talk and cross-pollination between the groups and BU leaders happened for the first time ever. That was a huge thing. That is big. That is transformational.

**Digital Transformation Lead,
High-Tech Manufacturer**

Thank You!

The Roux Institute
Northeastern University

Analytical **LEAP** Framework

Talent development in the age of AI

	Pre-Launch	Launch	Explore	Accelerate	Perform
Learning Culture	Continuous learning throughout the organization				
Ecosystem	The organization's data strategy is infused throughout all levels of the organization				
Analytical Architecture	Strong practices that enable data usage throughout the enterprise				
Processes	Data-driven decision making at all levels				
People	**Teams and individuals have the requisite knowledge and skills to accelerate organizational progress**				