

DEMAND ANALYSIS TO ACCOMPANY NOTICE OF INTENT FOR NEW OR EXTENDED DEGREES

The information from this form will be used:

- In summary form in the Notice of Intent
- In the Financial Analysis spreadsheet
- In the New Degree Proposal form
- In the submission for accreditation to the Northwest Commission on Colleges and Universities after approval by the Board of Regents

Using the information you developed in the Demand Analysis Workbook, please complete the form below and submit with your Notice of Intent. You do not need to submit the Workbook itself.

Proposed Degree	Masters in Artificial Intelligence	Location:	Pullman Campus
------------------------	---	------------------	-----------------------

1. Employer Demand

If you are extending a degree, or have a related existing degree, briefly summarize the employment outcomes for your graduates.

What is the state and regional employment demand for this degree?

Is long-term employer demand expected to grow, remain stable, or decline?

What is your evidence?

Answer here:
<p>MS in computer science (CS) is the most related existing degree. Almost all of our MS (Thesis/Non-Thesis) in CS graduates get jobs in software development companies including Microsoft, Amazon, Meta, Apple, and Intel.</p> <p>State Labor Demand: Artificial Intelligence programs map to three primary occupations: Software Developers, Computer Systems Analysts, and Computer & Information Systems Managers. These three occupations collectively had over twelve thousand annual job openings in Washington in 2024. However, these occupations are not AI-specific and a majority of these openings will be filled by completers from other programs like Computer Science or Information Technology.</p> <p>State Job Postings: Reviewing job posting records for a collection of Artificial Intelligence positions gives a more focused view of occupational demand for Artificial Intelligence programs. From August 2022 to July 2025, there were 797 unique job postings from 191 different employers within Washington. While this isn't a large number of postings, postings have grown sharply in recent years. From August 2022 to July 2023 there were only 81 job postings in Washington for Artificial Intelligence positions. However, this more than doubled to 229 postings in the next year, and in the most recent year this again more than doubled to 487 job postings. A majority of the Artificial Intelligence jobs posted in Washington from August 2024 to July 2025 were made by Amazon (103 postings), followed by Apple (72) and Microsoft (16), and had a median advertised salary of \$184.1 thousand.</p>

Based on national, regional, and industry trends, the evidence points strongly toward growth in demand for AI/ML skills over the long term (next 5-10+ years). Key reasons include:

1. Technology is increasingly integrated across sectors (manufacturing, services, biotech, agriculture, robotics, etc.), not only in “core tech” companies. That means more job roles will require AI skills even if not labeled “AI engineer”.
2. New AI subfields and applications (e.g. generative AI, large language models, autonomous systems, ethics, AI governance, deployment, ML Ops) create new job roles and expand hiring beyond just traditional software engineering.
3. Skill gap: Many reports note critical shortages of workers with advanced AI skills (especially in certain sub-areas such as model deployment, ethics, LLMs). That shortage tends to drive demand.
4. BLS projections for related occupations are positive: as mentioned, software developers, database architects/administrators, etc., have projected growth rates well above average.

Concrete Evidence: Reports indicate that AI-job postings are growing much faster than average jobs. For example, Veritone found ~81,298 AI job openings in Q4 2024, a ~36.6% increase vs Q4 2023. According to the Bureau of Labor Statistics (BLS) projections, occupations like software developers are projected to grow ~17.9% from 2023-33, which “faster than average” for all occupations. Those roles are often deeply tied to AI, ML, data engineering, etc.

2. Competitors

Who are your competitors? What is their competitive advantage? Are competitor-institutions planning to introduce similar programs/expand existing ones? Why is your department/school able to provide the proposed new degree better than other WSU departments/schools or other universities?

Answer here:

State Competition: The University of Washington has Washington’s oldest Master’s program in Artificial Intelligence, which first graduated 27 students in 2015. UW’s program has graduated 31 students on average from this program since 2015, with a high of 51 students in 2021 and, based on most recent available data, graduated 29 students in 2024. Seattle University just started a Master’s program in Artificial Intelligence in Fall 2025. Washington’s only other Artificial Intelligence program is a Bachelor’s degree offered through DigiPin Institute of Technology and graduated their first three students from the program in 2023.

Universities outside Washington state are also trying to develop similar MS in AI programs to meet the national needs in this critical area (e.g., Oregon State University, University of Penn). We are not aware of any plans to expand their programs, but they are trying to increase their enrollments. The key advantages our competitors including UW, OSU, and UPenn have are stronger ranking/reputation in AI, and a greater number of faculty and resources.

However, WSU has strong domain specialization (e.g., agriculture, water management, hardware, digital health, cybersecurity, power systems, materials science, additive manufacturing, catalysis, environmental sustainability, and viral diseases), existing labs and institutes (e.g., AgAID Institute,

Revised: 08/28/17

https://emailwsu.sharepoint.com/teams/WSU.FS-FSL/Shared Documents/FSL/Central Files/New Depts.College-per MOU/2025-2026/MS Artificial Intelligence/DEMAND_ANALYSIS_EECS_2267_FINAL_REVISIED.docx

Center for Precision & Automated Agricultural Systems, Institute for Materials Research, Composite Materials and Engineering Center, Center for Sustaining Agriculture and Natural Resources, Energy Systems Innovation Center, Advanced Grid Institute), statewide relevance. Several of the WSU faculty (close to 10 faculty) in the School of EECS do research in the broad area of “AI to Accelerate Engineering and Science” which is very unique and has strong reputation within the AI research and education programs landscape. All these factors give us a competitive advantage especially for students interested in applying AI to real-world problems in agriculture, environment, precision farming, rural/regional issues. Another advantage WSU has is the 4+1 accelerated MSAI program for our own BS in CS/CE/SE students which can take advantage of the large BS population to quickly make them work-ready in this AI-driven economy.

3. Student Demand

Describe the target market in light of regional population trends, especially in the target age group.

What is the current number of students in existing programs in the proposed market area in this field? What is the potential number of students forecasted?

What are the key characteristics of the market segment you seek? How will your degree serve their needs?

Answer here:

Our target students include

- Recent undergraduates in computer science, electrical engineering, applied mathematics and statistics, and other engineering/science disciplines within US and internationally. This also includes our own BS in CS/CE students through our proposed 4+1 accelerated MSAI program. They want strong AI/ML skills, possibly research experience, opportunity for internships, job placement, possibly credentials that stand out in competitive tech job market. Increasingly AI/ML tools are used in the overall workflow to accelerate productivity in almost all engineering, science, and industrial domains. Our focus on both fundamentals, real-world use-cases, and use-inspired AI solutions will provide the students with highly unique skills.
- Working professionals / mid-career switchers possibly with non-AI background (e.g. software developers, agriculture tech, robotics, engineers) wanting to shift or upskill.

Program Demand: In 2023, there were 1,643 Bachelor's degree completions in Washington from Computer Science, Applied Mathematics, Electrical & Computer Engineering, and Statistics programs; nationally, there were 54,061 Bachelor's degree completions from these programs. This represented a 38% growth in completions since 2019 for Washington, and a 35% growth at the national scale. Looking at Artificial Intelligence programs, there were 48 Master's degree completions from Artificial Intelligence programs in Washington in 2023; nationally, there were 936 Master's degree completions. While growth data for Artificial Intelligence programs isn't available for Washington, looking nationally we see there has been a 259% growth in Artificial Intelligence Master's degree program completions since 2019 - a strong sign of growing demand from students.

WSU has strong domain specialization (e.g., agriculture, water management, hardware, digital health, cybersecurity, power systems, materials science, additive manufacturing, catalysis, environmental sustainability, and viral diseases), existing labs and institutes (e.g., AgAID Institute, Center for Precision & Automated Agricultural Systems, Institute for Materials Research, Composite Materials and Engineering Center, Center for Sustaining Agriculture and Natural Resources, Energy Systems Innovation Center, Advanced Grid Institute), statewide relevance. Several of the WSU faculty (close to 10 faculty) in the School of EECS do research in the broad area of “AI to Accelerate Engineering and

Revised: 08/28/17

https://emailwsu.sharepoint.com/teams/WSU.FS-FSL/Shared Documents/FSL/Central Files/New Depts.College-per MOU/2025-2026/MS Artificial Intelligence/DEMAND_ANALYSIS_EECS_2267_FINAL_REVISIED.docx

Science” which is very unique and has strong reputation within the AI research and education programs landscape. All these factors give us a competitive advantage especially for students interested in applying AI to real-world problems in agriculture, environment, precision farming, rural/regional issues. The breadth of domains will give a large variety of use-cases to train the students in how to develop, implement, and evaluate use-inspired AI solutions.

Expected FTE (net new)

Year 1	20	Year 2	40	Year 3	60
---------------	----	---------------	----	---------------	----

How did you arrive at these numbers? How do they compare with your current enrollments in an existing degree or option, or related degree?

Answer here:

The enrollment projections were derived by triangulating WSU’s current related program enrollments, trends from comparable universities offering MS in AI, national and regional demand for AI education, industry/employer needs, and internal capacity for growth (faculty, labs, research institutes).

We used current and recent enrollment data in the following related programs as baseline indicators:

- MS in CS / Software Eng. ~45-50 students
- PhD in Computer Science ~50–60 students

Considering that MS in AI programs are relatively new, we anticipate the projections to represent net new students added to the program. This is taking into account students who have an undergraduate background in areas other than traditional computer science. Such students currently do not join our existing MS CS program but are more likely to consider the proposed MS AI program. We also anticipate students in our current undergraduate program at WSU EECS (BS CS, BS Software Engineering, BS Cybersecurity, BS Computer Engineering, BS Electrical Engineering) to enroll into the proposed 5-year BS+MS accelerated program.

Comparable programs (particularly in public universities with research focus and similar cost structures) include:
 University of Georgia (MS in AI) ~60–80
 Oregon State University (AI specialization) ~40–60

Given WSU’s research capacity, domain strengths (e.g., AgAID Institute, other system-wide AI Initiatives), and regional market, a cohort of 20 students in the first year is both realistic and achievable, with gradual growth over 3–5 years to 60–80 students annually, assuming effective promotion and program delivery. Expected enrollment will be approximately 80% non-resident and 20% resident students. An estimated 20% of students in the program will pursue the MS Thesis option.

According to the Bureau of Labor Statistics and industry job market data:

- (1) Jobs in AI, data science, and machine learning are growing 35–50% faster than the overall tech job market.
- (2) Applications to graduate AI/ML programs nationally have increased steadily for the past 5 years.
- (3) Online search interest for “MS in AI” has grown by ~40% since 2020, showing rising student demand.

The MS in AI is expected to eventually match or exceed the current MS in Computer Science in enrollment due to the specificity of its focus and its cross-disciplinary appeal (e.g., to students in agriculture, robotics,

environmental sciences). There are two additional reasons for our optimism. First, AI has seen unprecedented growth over the last two years and nobody would have predicted this including hardcore AI researchers. Most jobs outside computing will require upskilling in AI and machine learning. Second, a unique advantage WSU has is the 4+1 accelerated MSAI program for our own BS in CS/CE/SE students which can take advantage of the large BS population to quickly make them work-ready in this AI-driven economy.

4. Recruitment Plan

How and where are students going to find out about this program? Who will represent this department in its promotion activities? What specific venues can you use to promote an awareness of this new program? What means will be used to access and educate businesses, industry, agencies, and/or institutions about this offering?

Answer here:

- We will host a dedicated MSAI program page under the School of EECS and/or Graduate School with detailed curriculum, admissions, faculty, career outcomes, and application process. We will also list undergraduate programs on the WSU Graduate School portal and will be promoted during graduate recruitment campaigns.

We will also use social media channels and post on LinkedIn, Twitter/X, Instagram, and YouTube showcasing faculty, labs, student testimonials, and research highlights. We will tap into strong alumni network from WSU's CS, engineering, and data science programs.

We will participate in Graduate school fairs & recruitment events including NSF Graduate STEM Fairs, Grace Hopper Celebration (for Women in Computing), SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science), IEEE / ACM student conferences, and WSU & regional CS/Engineering career fairs.

We will leverage WSU's relationships with international recruiters or education consultants to promote the degree globally (e.g., India, China, Middle East, Southeast Asia) to recruit international students.

- (1) EECS Graduate Studies Chair: Acts as the academic face of the program in public, speaks at conferences, media interviews, student webinars. (2) Graduate Program Coordinator: Handles student inquiries, application follow-ups, and helps facilitate recruitment events. (3) EECS Director and VCEA Dean: Represent the program in research-related venues and collaborations with industry/government. (4) WSU Graduate School's recruitment staff: Help promote the degree as part of the university's graduate offerings. (5) Career & Industry Outreach Officers: Coordinate employer engagement, internships, and promotional opportunities with companies. (6) VCEA/WSU Marketing & Communications Office: Responsible for digital materials, social media, videos, ads, brochures.
- Academic and professional venues including (1) conferences such as AAAI, ICML, NeurIPS, KDD, CVPR, IEEE/ACM AI and Data Science meetings; (2) Disciplinary societies such as American Society of Agricultural & Biological Engineers and Society for AI in Agriculture; (3) LinkedIn groups for targeted sharing in AI/ML, data science, and tech career communities; and (4) Mailing lists such as WSU alumni, professional organizations, regional tech coalitions.

Local and regional tech/business venues including Greater Spokane Inc. and Tech Alliance of Washington events; Washington Technology Industry Association newsletters and events; and AgTech / Smart Agriculture meetups and incubators in Eastern Washington.

- Industry partnerships and outreach through AgAID Institute and CPAAS, WSU already works with agribusinesses, USDA, robotics & automation companies. These partnerships can be leveraged for promoting internships/co-op programs for MS in AI students; hosting joint webinars/workshops about AI in agriculture, automation, robotics; and engaging partners to sponsor capstone projects or research initiatives.

Email campaigns and newsletters to regional employers, alumni in tech/agritech, chambers of commerce, and government agencies (USDA, NIFA, WA Dept of Agriculture, etc.)

Offering workshops, short courses, and micro-credentials to introduce businesses to AI concepts. These can double as marketing channels for the MS program.

Media and PR: Articles in regional and national media highlighting WSU's AI research, student projects, AgAID outcomes. Case studies or success stories about how AI is transforming regional industries, with MSAI students involved.