# UNIVERSITY OF WYOMING

# POSITION PROFILE

## Department Head and Professor
## Electrical Engineering & Computer Science

### August 2023

# UNIVERSITY OF WYOMING

Nestled amid the beauty of two mountain ranges in southeastern Wyoming, you will find the nationally recognized teaching and research institution, the **University of Wyoming (UW)**. Established as a land-grant institution in 1886 when Wyoming was still a territory, UW has since grown to nearly 200 areas of study, drawing approximately 12,000 students from all 50 states and 83 countries. UW is known for its accomplished faculty and world-class facilities, its low student/faculty ratio, and quality undergraduate and graduate programs within its colleges of Agriculture, Life Sciences and Natural Resources, Arts & Sciences, Business, Education, Engineering & Physical Sciences, Health Sciences, Law, and the Honors College, as well as the School of Energy Resources, School of Computing, and the Haub School of Environment and Natural Resources. To learn more: http://www.uwyo.edu

Throughout its existence, UW has been the only four-year public university in the state of Wyoming, though it maintains close relationships with the state's eight community colleges. UW's global impact begins with innovative undergraduate and graduate research opportunities and extends through state and federal partnerships and recent initiatives such as the Wyoming Institute for Humanities Research, the School of Energy Resources, and the School of Computing. UW has played important roles in the lives of students, Wyoming residents, and communities for 137 years and has been:

- Recognized by *Forbes* in 2019 as "One of America's Best Value Colleges".
- Rated as a "Top 15 Outdoor Adventure College" by *Outside* magazine.

Furthermore, Wyoming ranked #4 in the *U.S. News and World Report's* "Best States for Higher Education".

The University community is working collaboratively to help the University reinforce and strengthen its reputation as it adapts to changing economic factors in the state and beyond. The University's strategic roadmap, "Forward for Wyoming 2023+: A Strategic Plan for the University of Wyoming," demonstrates that it is an exciting time to be a part of UW as the institution embarks on ambitious and impactful initiatives.

**Location:** Located in Laramie, Wyoming, a town of more than 31,000 with a unique blend of sophistication and Western hospitality, UW not only provides an environment for success but also offers varied academic and lifestyle opportunities. Named the "#1 Small College Town in America" by *College Value Online*, Laramie boasts a low cost of living with no state income tax, incredible outdoor recreational opportunities, an eclectic downtown area, and a great public school system.

# DEPARTMENT OF
# ELECTRICAL ENGINEERING & COMPUTER SCIENCE

The Department of Electrical Engineering and Computer Sciences (EECS) is training the next generation of top-quality engineers, researchers, and scientists. With a combination of successful, funded research and top-level industrial experience, EECS faculty bridge the gap between theory and practice, creating an environment in which students can develop the requisite skills demanded by the best employers, and provide tools and expertise to tackle grand challenges facing Wyoming and the world. To learn more: https://www.uwyo.edu/eecs/index.html

As one of 10 departments in the University's College of Engineering and Physical Sciences (CEPS), the Department offers ABET-accredited undergraduate degrees in Electrical Engineering, Computer Engineering, and Computer Science as well as Master of Science and Doctor of Philosophy degrees in computer science and electrical engineering.

A total of 18 faculty members, 2 lecturers, and 3 staff (plus budgeting, hiring, and grant management professionals working through shared services) serve over 390 undergraduates and approximately 50 graduate students. The three BS degrees combined make EECS the 2nd largest undergraduate program within CEPS.

| Faculty National Recognition and Influence: | Support for Faculty and Students: |
|---|---|
| • 1 IEEE fellow, 4 ASEE members, 2 ACM senior members | • Total endowments for the EECS department: $2.9M |
| • Recipient of the national ASEE Service Award | • Estimated FY 2023 Payout: $163K |
| • Faculty with joint appointments at SNL and INL | • Estimated FY 2024 Payout: $173K |
| • Board member of Rocky Mountain Bioengineering symposium | • Donations FY 2023: $35K |
| • Over a dozen well-received textbooks published by EECS faculty | |

| Endowments Support: | |
|---|---|
| • Loy and Edith Harris Excellence Fund | • Jacquot Scholarship |
| • Nicholson Chair in Power Engineering | • Keyes Memorial Scholarship |
| • Nicholson Power Engineering Scholarship | • Rudy EE Scholarship |
| • Nicholson Power Engineering Graduate Fellowship | • Long Scholarship |
| • Adams Graduate Fellowship | • Tatman Family Scholarship |
| • Beach Scholarship | • Rocky Mountain Power Engineering Scholarship |
| • Cupal Scholarship | • Wunder Scholarship, and more! |

**Research:**

The University of Wyoming has invested heavily in engineering, computing, and related areas, as evidenced by the University's Tier-1 Engineering Initiative, the NCAR-Wyoming Computing Center, its local Advanced Research Computing Center, and the Wyoming Geographic Information Science Center. As such, extensive related opportunities exist within the department, the Center for Blockchain and Digital Innovation, the School of Energy Resources, the newly created School of Computing, and across campus. EECS faculty are successful in securing funding from DoE, NSF, NOAA, DoD, and private corporations for their research.

Research interests in the department include:

- Control theory for robotics, aerospace, and power systems
- Digital image/signal processing
- Signal processing and data analytics for power and intelligent transport systems
- Energy storage systems and microgrids
- Human-centered computing and human-computer interaction for 3-D environments
- Computer vision and AR devices for medicine
- Cybersecurity
- Robotics, intelligent and autonomous systems, multi-agent systems
- ML & AI: deep reinforcement learning, automated machine learning, applications to other disciplines, secure and privacy-preserving ML, natural language processing
- Combinatorial problem solving and the nexus of combinatorial problems and machine learning
- Materials, devices, and electronic circuits: RF and microwave electronics, nanostructures, and quantum dots
- Quantum computing
- Accelerated computing: GPU, quantum computing, and algorithms
- Theoretical computer science: computational complexity and automated theorem proving

**EECS Research Vision**

- Nationally and Internationally Recognized
- Making Wyoming and the World Better
- Strategically Focused
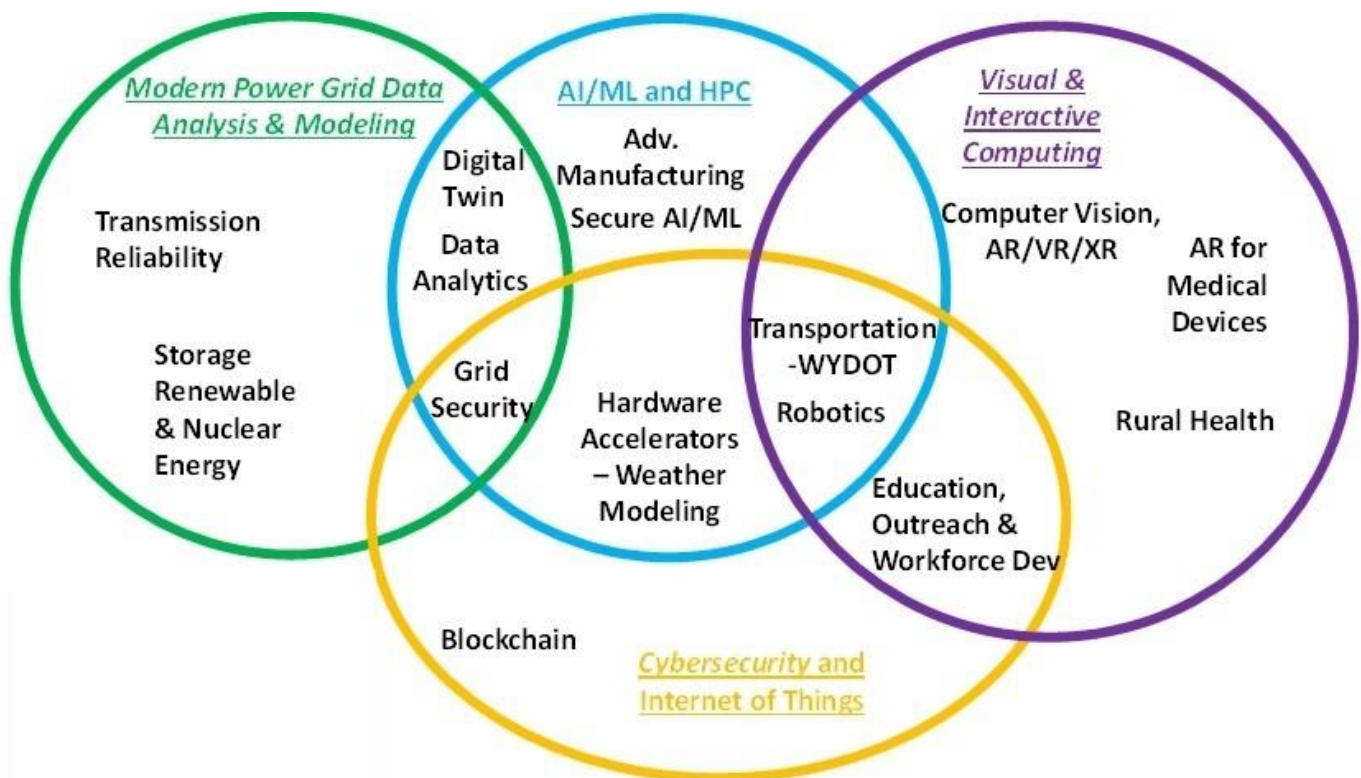- Driving Innovation

**Research Impacts:**

- 2 EECS faculty have received UW's highest faculty award, and another's research was selected for the Presidential Speaker's award
- 6 active patents held by faculty
- Most cited faculty has over 5000 citations
- Average citations for full professors: 1664
- Average h-index for full professors: 18.3
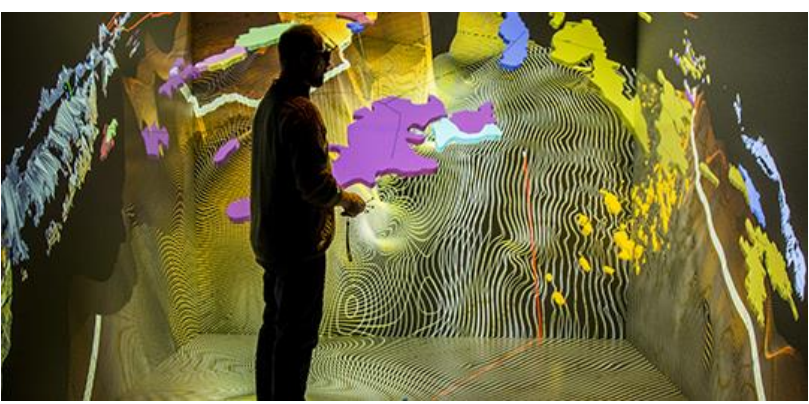- NVIDIA HPC University

Laboratory experience is the heart of a high-quality engineering education, so EECS curricula emphasize active learning through intensive labs and research experiences for students of all levels. The facilities are exceptional, with labs that are updated, remodeled, and maintained continuously to keep up with the rapidly changing fields of electrical engineering and computer science. Teamwork between course instructors and staff ensures that necessary parts and test equipment are available, and laboratory teaching assistants, typically graduate students, ensure equipment is functional and that students understand how to operate the equipment properly.

The Department is committed to providing a high-quality, practical, and experiential educational experience, undertaking research relevant to the nation and region while serving Wyoming's existing and emerging businesses, industries, and agencies. The department has identified emerging areas of research that are built upon faculty strength, critical to the State of Wyoming and the nation, forward-looking and ripe with research opportunities.

# SCHOOL OF COMPUTING

*The interdisciplinary nature of this new School, featuring graduate student/ faculty fellow programs and burgeoning corporate partnerships, provides great opportunities for EECS faculty & students.*

In January 2021, the University of Wyoming launched a new school with the goals of:

- propelling UW to be a national leader in computational and digital research, education, and engagement;
- serving as a computational hub for students, faculty, staff, community, and our industry/state/academic partners;
- acting as a steward, supporter, and developer of digital skills and computational thinking for all.
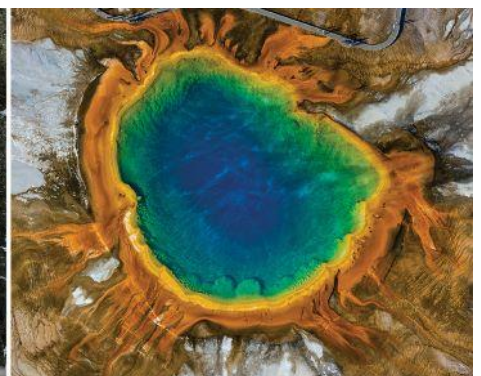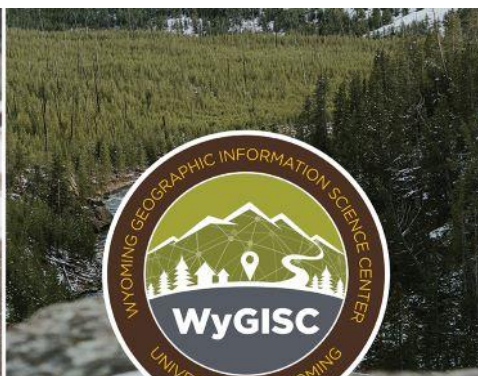
The School of Computing (SoC) will offer a computing minor (starting Fall 2023), a Software Development BS degree (in partnership with Wyoming's Community Colleges starting Fall 2024), BA/BS degrees in computing, and graduate degrees. These undergraduate offerings, combined with EECS's BS in Computer Science and BS in Computer Engineering will offer UW students a wide variety of pathways into computing-related careers.

It is anticipated that the graduate programs will include two interdisciplinary programs jointly housed by several departments, including EECS. One will be an MS degree in Explainable AI, and another will be an MS degree in Quantum Information Science and Engineering.



SoC is also home to the Wyoming Geographic Information Science Center (WyGISC). WyGISC's mission is to advance the knowledge and application of geographic information science and technology through research, education, and service. WyGISC aspires to become a premier interdisciplinary academic center in geographic information science research and education while strengthening its unique leadership role in service and outreach to the University, state, and region. WyGISC offers a BS in GIS&T, a professional master's degree, and certificates in remote sensing, GIS, and unmanned aerial systems.

EECS and the SoC are separate entities, but synergetic and collaborative in the development of computing education and research at UW. 40% of the SoC adjunct faculty are from EECS, and several EECS faculty are involved in advisory capacities for the School.

# THE OPPORTUNITY

*As the Dean of the College of Engineering and Physical Sciences, I view the next **Head of the Department of Electrical Engineering and Computer Science** as one of our most critical and important hires. The EECS Department is a key component in the future of this university (not to mention my own home department), and the next Department Head will be stepping in at a particularly exciting time for the department and the university, with many new opportunities.*

*~ Cameron H.G. Wright, Dean, College of Engineering and Physical Sciences*

The Department of Electrical Engineering and Computer Sciences (EECS) is experiencing a period of growth and is seeking a capable and experienced leader to ensure this growth is leveraged. The Department Head will be a dynamic and collaborative leader who guides the department in identifying future areas of growth and investment while providing organizational and administrative expertise for the operation. The selected candidate will report to and work closely with the Dean of the College of Engineering and Physical Sciences and provide leadership in all matters of department policy, including appointments, promotions, instruction, research, and administration.

The Department Head will work collaboratively with the leadership of the newly created School of Computing, an interdisciplinary program incorporating computing into diverse programs with a focus on enhancing technology education across the institution from an applied computing perspective. The School will serve as a key partner to EECS in further championing efforts to make the University more digital, inclusive, interdisciplinary, and entrepreneurial through computing partnerships across Wyoming.

This position is a benefit-eligible, tenure-track appointment and the Department Head is expected to serve for a minimum initial term of five years with the opportunity for reappointment.

**Required Qualifications – The Successful Candidate Will Possess These Qualifications:**

- A PhD in Electrical Engineering, Computer Engineering, Computer Science, or a closely related field.
- A distinguished record of teaching, research, scholarship, and service warranting appointment at the rank of Professor in the UW EECS department.
- Experience working with diverse populations and/or diverse initiatives.
- An understanding of the opportunities and challenges within the fields of electrical engineering, computer engineering, and computer science that is current.
- Demonstrated leadership skills indicating an ability to advance a research-oriented department, liaise with university administration, and mentor faculty and staff to be successful.
- Excellent organizational and communication skills.

**Additional Desired Qualifications – The Successful Candidate Will Possess Some of These Qualifications:**

- Experience developing a thriving independent research program that spans multiple areas of EECS.
- A record of interdisciplinary collaboration.
- Experience leading multi-investigator, multi-institution awards.
- A record of participation in entrepreneurial efforts, such as start-up companies.
- A record of participation in initiatives to broaden participation within the faculty and student populations.
- A record of participation in the creation, development, and delivery of novel curricula.
- A compelling vision for leadership that ensures the programs will thrive and prosper going forward.

The University of Wyoming invites diverse applicants to consider its employment opportunities. UW is especially interested in candidates who have experience working with diverse populations and/or diversity initiatives.

**Why Consider the Opportunity:**

- Work with outstanding faculty and staff colleagues.
- Drive innovation in areas including fast weather predictions, AI for novel materials, formal methods for FinTech/Complexity theory, and robotics/drones for CEA.
- Work within state-of-the-art labs & facilities.
- Participate in innovative, impactful research.
- Benefit from a strong financial foundation, including a total department endowment of $2.9 million.
- Enjoy a competitive salary and strong benefits including a retirement plan with a 14.19% University contribution (based on gross salary), excellent leave plans (vacations, sick days, and holidays), a tuition waiver program, a recreation center discounted membership opportunity and a variety of on-campus dining and banking services.

*As President, I could not be more committed to this mission, and the newly invigorated Department of Electrical Engineering and Computer Science (EECS) is key to these efforts. We are looking for an outstanding individual with vision and experience to lead the development and growth of this department which is a centerpiece of our commitment to digital education, research, and economic development in Wyoming. The opportunities at UW to strengthen computing, and EECS, are truly outstanding.*

*~ Ed Seidel, President of the University of Wyoming*

# PROCEDURE FOR CANDIDACY

The University of Wyoming, in consultation with Summit Search Solutions, Inc., will immediately begin a confidential review of application materials. Candidates who apply by **September 29, 2023** will be given first consideration. Please submit a CV/resume and a letter that describes your reasons for interest in this opportunity as well as your related experience and record of success, referencing at least the minimum qualifications listed. Your letter will be used throughout the evaluation process and passed on to hiring authorities, so it is an important part of the application package. All applications and nominations will be held in confidence.

To apply online, go to: https://theapplicantmanager.com/jobs?pos=su361

**For more information or to offer recommendations or nominations:**

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*Summit Search Solutions, Inc.* is a boutique executive search firm dedicated to serving the education and nonprofit sectors nationwide. Summit has a team of experienced recruiting consultants in strategic locations across the country including California, Kansas, Maryland, New York, and North Carolina.

*Members of under-represented groups are encouraged to apply. The University's policy has been and will continue to be, one of nondiscrimination, offering equal opportunity to all employees and applicants for employment without regard to race, gender, religion, color, national origin, disability, age, protected veteran status, sexual orientation, gender identity, genetic information, creed, ancestry, political belief, pregnancy, or other status protected by state and federal statutes or University regulations. The University's nondiscrimination policy applies to all matters relating to its education programs and activities including recruiting, hiring, training, compensation, benefits, promotions, demotions, transfers, and all other terms and conditions of employment. To review the EEO is the Law Poster and its Supplement, please see The Diversity & Fairness page.*

*Pursuant to Wyoming State law, W.S. 19-14-102, as amended, an honorably discharged veteran who has been a resident of the state of Wyoming for one (1) year or more at any time prior to the date when the veteran applies for employment, or any surviving spouse who was married to such veteran at the time of the veteran's death, who is receiving federal survivor benefits based on the veteran's military service and is applying for employment, shall receive an interview preference during the applicant screening process with the University of Wyoming. At the time of application, the applicant must possess the business capacity, competency, education or other qualifications required for the position. If disabilities do not materially interfere with performance of job duties, disabled veterans will be given preference over able-bodied veterans.* **Appropriate documentation of veteran status must be provided at the time of application as outlined in the application process.** *No preference will be given to a veteran currently employed by a public department.*

*The University of Wyoming conducts background investigations for all final candidates being considered for employment. Offers of employment are contingent upon the completion of the background check.*

*Applicants with disabilities may request accommodation to complete the application and selection process. Please notify Human Resources at least three (3) working days prior to the date of need.*

# LARAMIE, WYOMING

Laramie is filled with hospitality, entertainment, and excitement while providing a neighborly atmosphere and warm small-town feel. The name "Wyoming" conjures up visions of the Old West as few others can. Laramie features a historic downtown, prairie and mountain vistas, rodeos, guest ranches, and more. Surrounded by the great outdoors, Laramie is also southeastern Wyoming's center for arts events, with a lively music and theater scene, art exhibitions, festivals, and a variety of other entertainment. And don't forget all the sports activities at the university and K-12 levels.

### *Interesting Facts:*

- Also known as the "Gem City of the Plains," and "Laradise", Laramie is located in the southeastern part of Wyoming approximately 45 miles from the state capital, Cheyenne, and 130 miles from Denver, Colorado.
- Laramie sits at 7,200 feet above sea level in the Laramie River Valley surrounded by the Medicine Bow National Forest, the Laramie Mountains, and the Snowy Range.
- Laramie has a 6% sales tax but does not have a state income tax or state inheritance tax.
- Laramie offers a variety of outdoor adventures with more than 250 days of sunshine per year.
- The quality of life and amenities Laramie has to offer bring several types of industries to the area including technology companies and academia.

About 20 minutes east of Laramie, the Vedauwoo Recreation Area boasts some of the best rock climbing in the country. You can photograph abundant wildlife, dramatic mountain scenes, and jumbled rock formations. And with more than a hundred mountain biking trails, the Laramie area provides a paradise for exploration on two wheels. Whether you prefer walking or hiking; camping or day trips; fishing or hunting; mountains, lakes, rivers, or trails – Laramie offers something for everyone. Families will find fun and exploration close to town, while backpackers and sportsmen can spend a week in the high country of the Medicine Bow Mountains. And as a winter snow enthusiast, you can escape the crowds by exploring the hills, forested glens, and rolling meadows of the Snowy Range from the back of a snowmobile or on downhill or cross-country skis. Laramie is one of Wyoming's favorite playgrounds!

### *For more information on Laramie please visit:*

•Visit Laramie, http://visitlaramie.org/ •Laramie Chamber Business Alliance, http://laramie.org/
•Laramie Main Street https://laramiemainstreet.org/