



REAC and Webmaster Report, 30 Oct 2024

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Region 5 Educational Activities Coordinator (REAC)

Activities

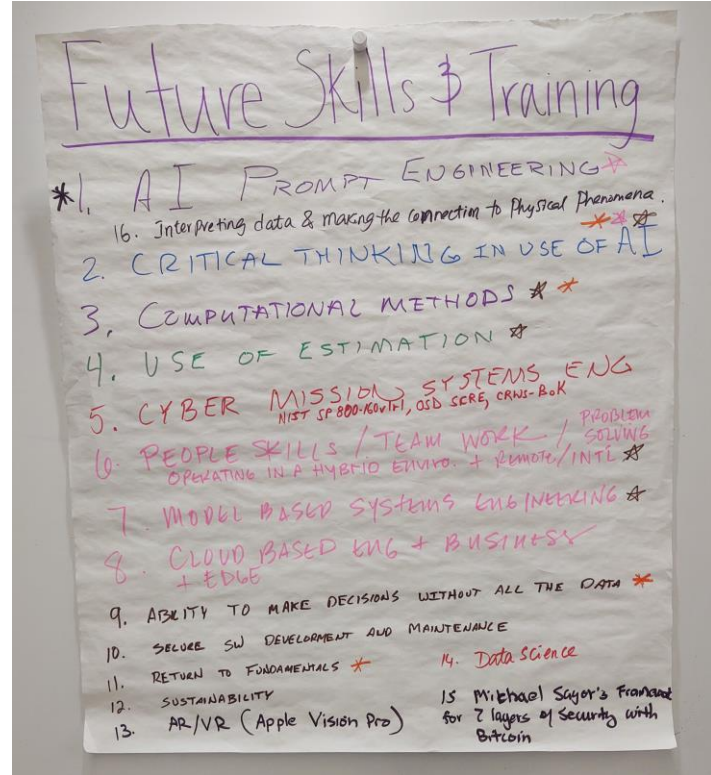
- ▶ IEEE STEM Summit – Best STEM practices, Oct 23-25 2024, Access to Videos
- ▶ Region 5, IEEE, 28 Oct 2024, West Region Townhall, Sections Best Practices
 - **Reminder: Region 5 Priorities for 2024**
 - **Improving the Leadership Vitality of our Sections**
 - **Membership Development: Increase YP pipeline from Student Branches (YP Leadership Webpage)**
 - **Growing Connections with Industry**
 - Issues: Recruitment of volunteers/filling in leadership positions, help with website: no site visits
 - Director-Elect Christopher Sanderson asked if we have website for communication, YP involvement
 - **(1) 2024 5-Webinar AI Series: AI & Privacy, (2) dedicated YP webpage/calendar**
- ▶ WIE Webinar Series, not technical, shared life experiences
 - 6th one: The Technical Publishing World from Academia to Industry (looking for more good speakers), 14 Nov 2024, 6:00 pm (MST),
- ▶ Invited to Participate in USAF Academy Scholarship of Teaching and Learning (SOTL) Workshop,
 - 19 Nov 2024, Full one-day workshop
 - Topic on AI and Education; Evaluate USAFA faculty/student projects
- ▶ Engineering Leadership Council (ELC), 29 Oct 2024 at UCCS Cybersecurity Building
 - Next set of slides are in draft, ELC will collate info for future dissemination

UCCS ELC Workshop

- ▶ Engineering Leadership Council (ELC), 29 Oct 2024
 - Met with UCCS Dean of Engineering, Dr Ying Shang
 - Expressed interest about our PPS meetings
 - Dean invited me to talk with UCCS IEEE Student Branch
 - Will receive cleaner version in future
 - 4 issues were addressed by group of approximately 30 members
 - 3 Student Presentations – shared internship experiences

Future Skills and Training

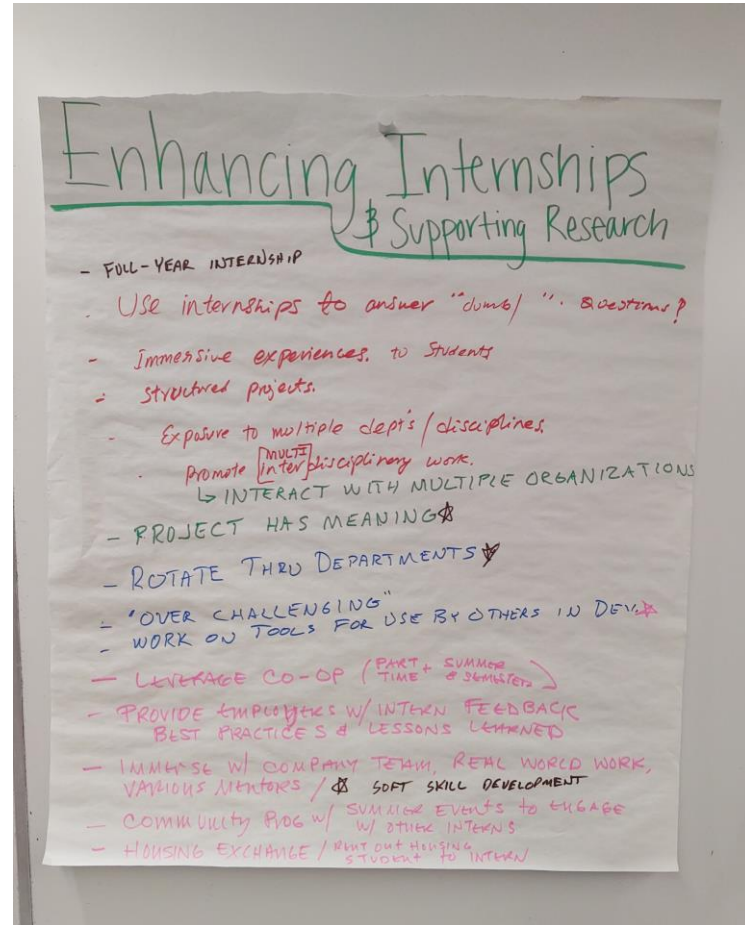
- AI Prompt Engineering
- Critical Thinking in Use of AI
- Computational Methods
- Use of Estimation
- Superskills (Softskills – ABET)
 - Model Based Systems Engineering (MSBE)
- Framework for 7 Layers of Security (Energy, Technology, Political, Financial, Capital, Spatial, Temporal)



UCCS ELC Workshop

Enhancing Internships and Supporting Research

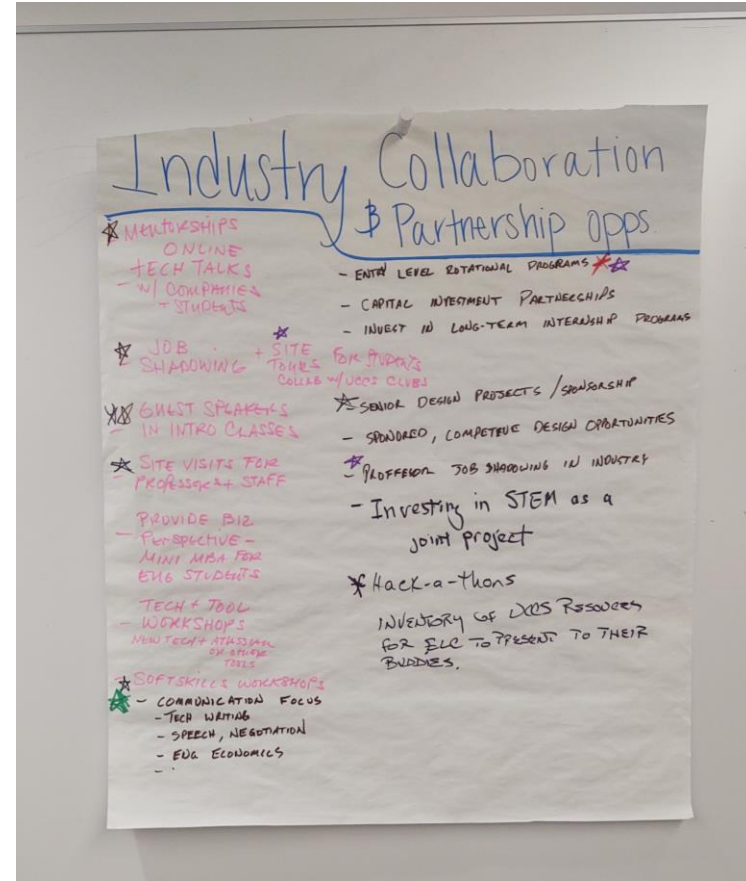
- ▶ Project has meaning (relevant)
- ▶ Rotate through departments
- ▶ Soft skill development (Superskills replacing softskills – ABET)



UCCS ELC Workshop

Enhancing Internships and Supporting Research

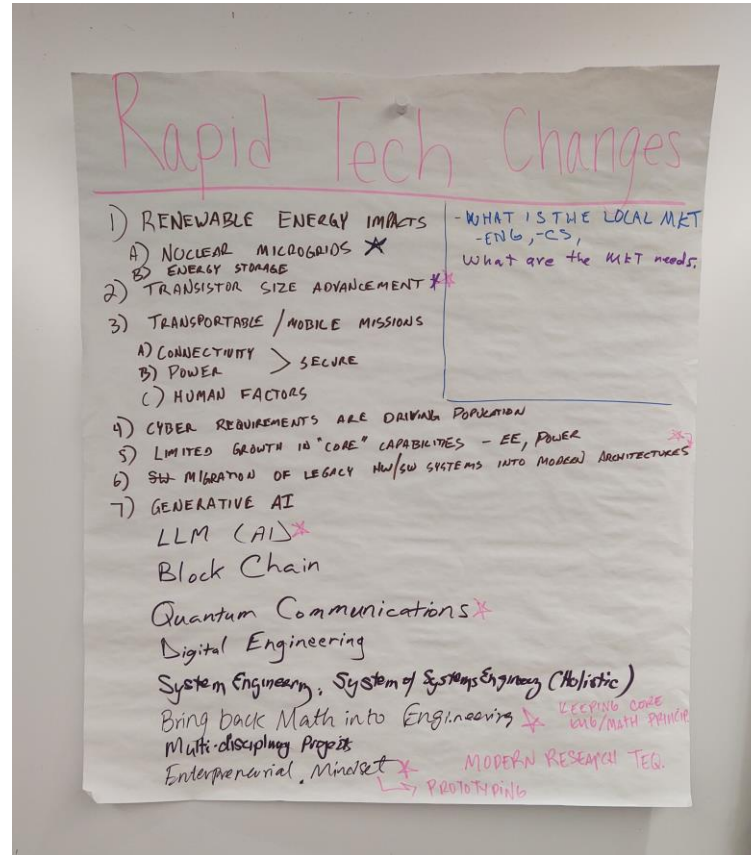
- ▶ Mentorship Online: Tech talks with companies and students
- ▶ Job Shadowing
- ▶ Guest Speakers & Intro Classes
- ▶ Site Visits for Professional Staff
- ▶ Communication Focus
- ▶ Senior Design Projects/Sponsorship
- ▶ Hack-a-thons
- ▶ Inventory of UCCS Resources for ELC to Present To Their Buddies



UCCS ELC Workshop

Renewable Energy Impacts

- ▶ Nuclear Microgrids
- ▶ Transistor Size Advancement
- ▶ Large Language Modeling (AI)
- ▶ Generative AI
- ▶ Quantum Communications
- ▶ System Engineering
- ▶ System of System Engineering (Holistic)
- ▶ Bring Back Math into Engineering (Theoretical vs Applied)
- ▶ Multi-Disciplinary Projects
- ▶ Entrepreneurial Mindset (for prototyping)



Region 5 Priorities for 2024

- Improving the Leadership Vitality of our Sections
- Membership Development: Increase YP pipeline from Student Branches
- Growing Connections with Industry

IEEE

- **Vision:** IEEE will be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions.
- **Mission:** IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity.

IEEE Pikes Peak Section

- **Vision:** To be valued members in the community of the Pikes Peak Region as a recognized and engaged technical organization focused on:
 - Professional growth
 - Innovative and Viable Solutions
 - Educational Outreach
- **Mission:** To foster technological innovation and excellence for contributing to the economic growth in the Pikes Peak Region

Strategic Goals

- Enhance professional skills
- Increase Member Engagement
- Assist improvement of workforce
- Invest in STEM education



OTU GRAD STUDENT BUILDS 3-D PRINTED QUADCOPTER
(Inspired by IEEE OTU Student Quadcopter Activities)



Sharing knowledge with
IEEE OTU student members



Simplest Motor



Need Help from IEEE Pikes Peak EXCOM

- ▶ Intent of task described below is to stimulate discussion, increased engagement with members and industry, develop leadership skills

Task: AI Prompt

- ▶ Explain innovation and technology for humanity. Identify and explain 15 examples using Bitcoin as a case study as an intersection between technology and economics and why it is engineered as perfect money. Use Metcalfe's law to explain the price volatility and adoption of Bitcoin
 - You can cut and paste above task as a prompt if you want to use ChatGPT
 - Based on ChatGPT response
 - Identify one example that resonates with you
 - Identify one example you disagree with
 - Identify one example you don't understand
- ▶ Due: 7 Nov 2024
 - I'll collect your responses that will be used to develop an educational series of panel discussions (student level, section level, Region5 (26 Sections)
 - Springboard to expand thinking in terms of multi-disciplinary skills (USAFA Experience – 1984-1989)
 - Scale task from EXCOM to Student Branches and PPS Section, then to Region 5 Sections (5- Webinar/Panel Discussion Series)
- ▶ Above task is posted on home page at <https://r5.ieee.org/pikespeak>

Application of AI Prompting to Recent Voting Narratives

- ▶ Imagine a voting system founded on transparency and decentralization, designed to record every vote securely and independently, minimizing interference. What if this system also allowed citizens to verify that their representatives genuinely reflect the voices of those they serve? Could modern technologies like blockchain, valued for transparency and security, introduce a new level of accountability, enabling citizens to assess whether leaders act in alignment with the nation's best interests?
- ▶ This thought experiment raises an intriguing question: Could such a framework reinforce the foundation of a constitutional republic by promoting trust and shared values? By exploring these possibilities, we can consider whether a system like this might contribute to a secure, participatory, and trust-centered environment, one that resonates with the core principles of our democratic institutions and unites us in our commitment to the ideals that strengthen our society.
- ▶ **Note: The above attempts to create a balanced, speculative tone that invites exploration without advocating any particular approach.**