

Bridging the Gap between Industry and Collegiate Education in Networking

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Introduction

John Phan (phan13@purdue.edu)

- 3rd year undergraduate pursuing degrees in Information Security, Communication, and Network Engineering
- Avid researcher in NLP (currently focusing on malware stylometry)
- Student security team lead at Purdue Research Computing
- Undergraduate Teaching Assistant
- Laptop sticker connoisseur

Introduction

Ryan Tom (tom0@purdue.edu)

- Junior Studying Cybersecurity and Psychology at Purdue
- Teaching Assistant for Cybersecurity Fundamentals
- Conducting Psychology Research in Cyberdeviancy
- 5 years of Network Engineering Experience
- Interned with Purdue University Fort Wayne

Introduction

Tyler Peatman (goat@purdue.edu)

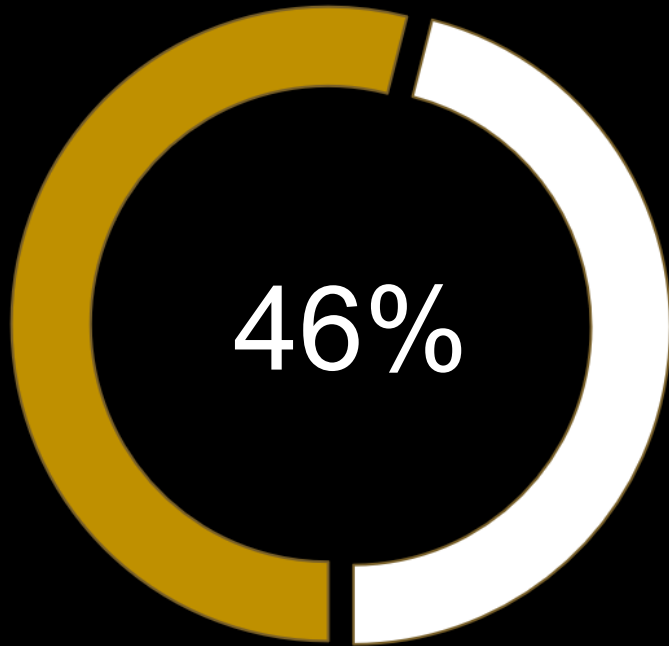
- Senior Studying Cybersecurity and Psychology at Purdue
- Undergraduate Teaching Assistant at Purdue University
- Interned for 2 years at Lockheed Martin as a Software Engineer
- Will work full-time for Lockheed Martin as a Software Engineer in their Engineering Leadership Development Program (ELDP)
- Will pursue a M.S.E at Cornell University

Agenda

1. Background
2. Current Joint Industry-Education Approaches
3. What More Can We Do?
4. A Revolving Cycle for Industry & Collegiate Education
5. Leaving Your Mark

Some Scary Statistics

18 months after Hiring⁴



■ Succeed ■ Fail

Lost productivity from inadequate training costs employers an average of 1 to 2.5% of total revenue³

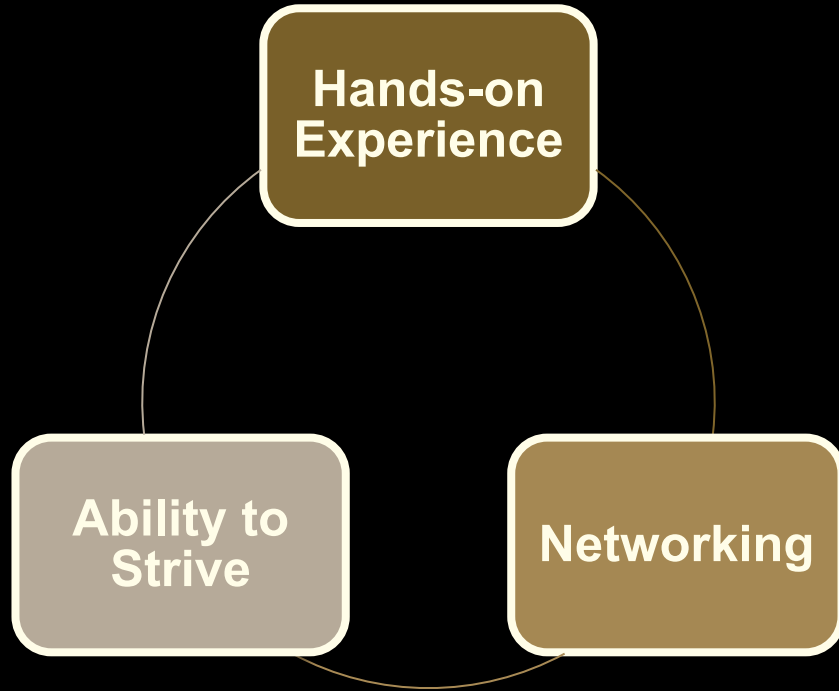
The Current Landscape

- On Campus Company Recruitment
- Company Information Sessions
- Industry Donations
- Co-Op and Internship Programs
- Career Fairs

Investments in the Future

- Employer engagement at an individual level
- Industrial Advisory Boards & subsequent interactions
- Industry-sponsored events and training programs
- Conference sponsorships and interpersonal networking
- Mentorship opportunities

Career Building Opportunities



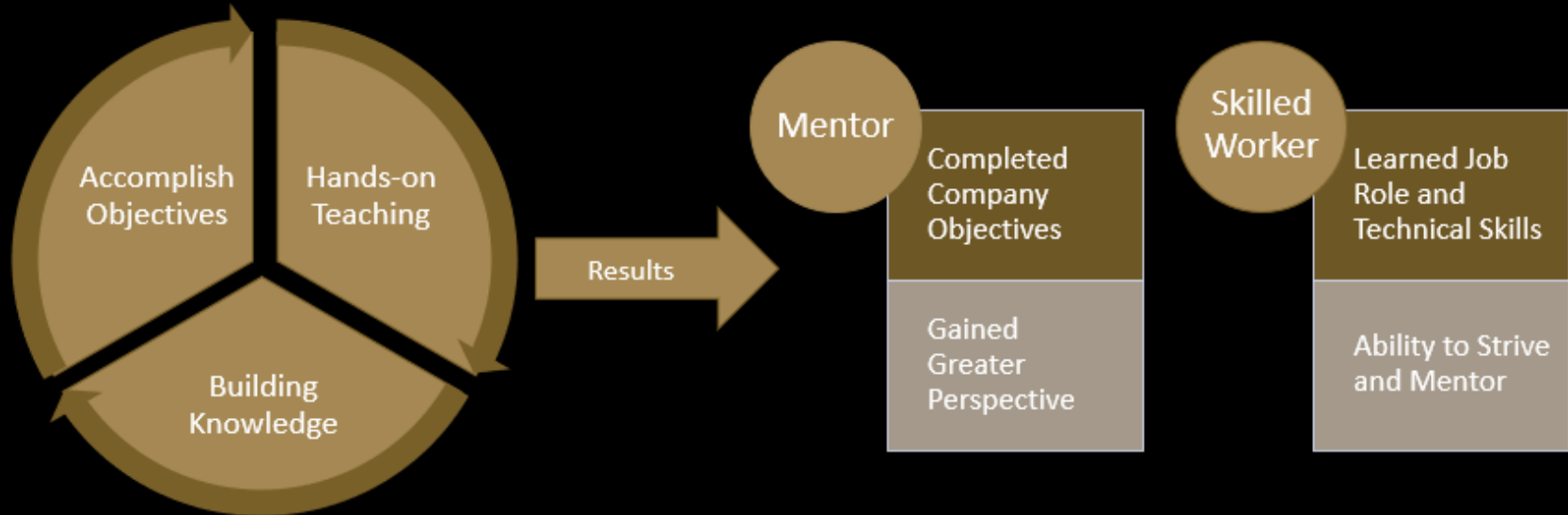
College Immersion Program

The Mentor and Mentee

Passionate Instructors

Power of Peered Learning

Simplified Mentor Process



What Happens...

...when you think about all the other benefits (and costs)?

...when you establish a mentorship cycle?

...when you give younger generations direct experience?

...when you institute this throughout collegiate education?

...But How?

Industry Advancement

What is good?

- **Networking is advancing at a rapid pace**

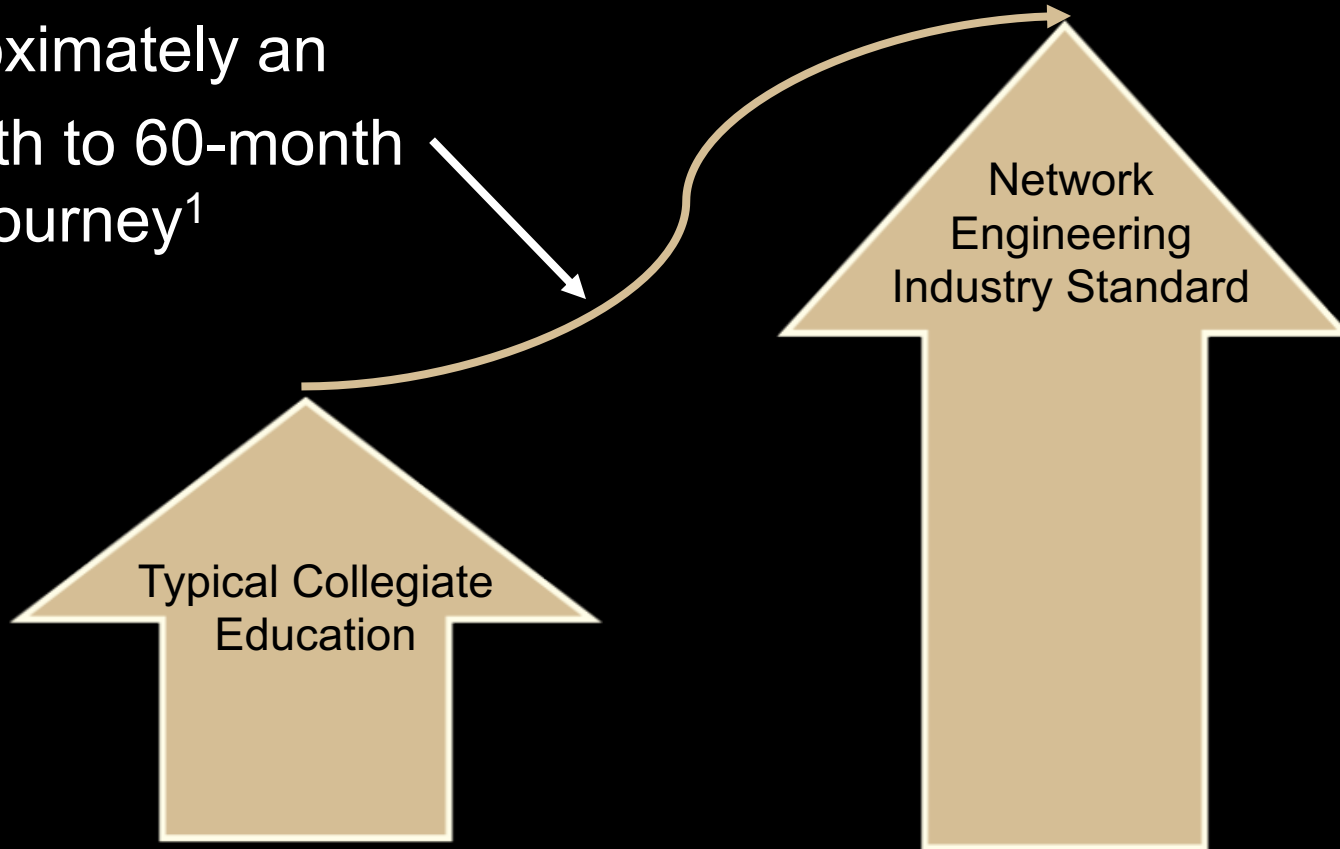
What is bad?

- **It is difficult for Networking Education to keep up**

It seems infeasible that education in this sector can match its advancements due to the financial barriers.

The Revolving Cycle

Approximately an
18-month to 60-month
journey¹



Leaving Your Mark

- **Invest in the future of your company and the field**
- **Lend a helping hand to the younger generation**
 - Recommend Collegiate Curriculum Changes
 - Donate Networking Equipment to Network Engineering Departments
 - Expand Internship, Co-op, and Mentorship programs
 - Increase Continual Educational Programs for current employees, collegiate faculty, and collegiate Students

Ever Grateful...

Thank you to NANOG and their College Immersion program.

BUT ALSO...

Thank you to the hardest working professor in computing, Professor Nicole Hands.

References

1. U.S. Bureau of Labor Statistics. (2019). Computing Network Architects. *Occupational Outlook Handbook*.
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3. O'Connell, M., & Kung, M. C. (2007). The Cost of Employee Turnover. *Industrial Management*, 49(1).
4. Rollag, K., Parise, S., & Cross, R. (2005). Getting new hires up to speed quickly. *MIT Sloan Management Review*, 46(2), 35.