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English Majors in Cybersecurity

Introduction

Upon reading a compelling, inspiring science fiction book, an English major may be enticed by the mergence of both one's interest in IT and majoring in English. Being a science fiction author seems to be the only popularized place for an English major in the world of IT. Cybersecurity is an enticing professional field with profitable and numerous career opportunities, but does the cybersecurity profession apply to English majors? Cybersecurity relates to the English discipline though its real-world materialization of science fictional concepts. Most philosophies of cyber and digital innovation and practice originate in literature. Ideas like artificial intelligence (AI), technogenesis, and ponderings on ethical concerns regarding digital practice were all conceptualized and popularized through literary minds. For example, Mary Shelly's *Frankenstein* is a discussion on AI, or George Orwell's *1984* overtly examines the ethicality of merging digital and human connections. Along the same lines, contemporary writers like N. Katherine Hayles theorizes about technogenesis which is the "adaptation, the fit between organisms and their environments recognizing that both sides of the engagement (humans and technologies) are undergoing coordinated transformations" (Hayles 81). She observes the intersections between the sciences and humanities and how both disciplines can coordinate a social theory that analyzes the projections of human and digital development. This notion of technogenesis exemplifies the convergence of English contributions to scientific contexts.

Discourse communities possess preconceived notions that liberal arts skills cannot intersect with STEM related fields because these disciplines demand two fundamentally opposing perspectives. Literature, and English as a discipline, relates to technology through an intersection of ideas and concepts while simultaneously maintaining a distinct difference in thought; however, the divergence in thought allocates a binary within academic and professional discourse. This binary suggests an English major has no value within a technical profession like cybersecurity that often demands education and experience in computer science or other similar technical expertise because humanities skills are alienated to serve poetic, flowery, mechanically unproductive purposes. How is an English major going to be competent within a technical job like cybersecurity? Many believe that degrees in STEM are more practical than degrees in the humanities or liberal arts because there are more clear, professional applications and opportunities (Veltsos). The issue of practicality contributes to this binary. Not every individual is interested in STEM related disciplines, yet there is imminent pressure to get a STEM degree because of the promising professional prospects. The dichotomy limits a profession to boundaries that are not inherently true. Cybersecurity is a technical profession that seems to only require a bachelor's degree in technology related fields, yet English majors can have just as many career prospects as their STEM majoring counterparts because of the distinct skills and perspectives they possess.

Main Competencies

The English discipline creates a space for discussions that diversify thought. English has expansive, creative liberties in terms of the frame of reference which is evident in science fiction; therefore, this creativity can be used towards the technical aspects of cybersecurity because it ensures that conscious, reflective thought identifies issues and practices within the profession

through a different perspective. One of the main competencies that applies to cybersecurity is the relation of ethics within the digital realm. For example, the persuasive appeal *ethos* dissects the credibility and trustworthiness of a speaker; therefore, English competencies analyze rhetorical aspects of an argument. Logic and reasoning resonate with the human dynamics that digital practices deal with; therefore, issues pertaining to cybersecurity is subject to diverse approaches and interpretations because of the different frame of mind liberal arts majors possess in contrast to the more technical expertise cybersecurity is most associated with. These skills can contribute to the cybersecurity field in the form of easy to digest reports on research or events that are accessible to larger audiences since English majors can communicate complex technical content to audiences with limited exposure to the issues being discussed.

Awareness of one's frame of thinking is another relevant skill that English cultivates within the discipline. In a professional situation, this might look like nonfictional writing for a whitepaper report instead of technical writing. Many cyber jobs likely require nonfictional writing which is different than writing a marketing piece, grant proposal, technical research report, or audit report. Active agents in the English discipline personify skills like critical theory which understands and perceives issues through the way we define certain terms and concepts and how these implications might contribute to or reform an issue. In a professional sense, this might look like rewriting a policy to include more specific language eliminating misinterpretations that cause conflict. This notion of critical thinking exemplifies the precise skill set English majors develop through their education. Some specific English classes that align with critical thinking skills include Critical Theory, Advanced Rhetoric and Writing or other writing intensive English courses. It is important to note that writing is less likely to be replaced by synthetic, digital practices like automation, so being an effective communicator in written reports

or presentations is a valuable skill. Since English majors are cultivated researchers, they understand how to approach a problem and gather evidence that supports the claims trying to be made, so rewriting research or collecting research from data programs or global contexts is framed through a trained eye in rhetoric and effective argumentation. The course work an English major will experience has high volumes of reading, writing, and researching; therefore, by the time one receives their degree, they will be comfortable as effective communicators and researchers.

Action Plans

Career prospects for English majors in cybersecurity are vast and address multiple avenues of creative interest. Introductory level cybersecurity classes will help prepares students with basic, comprehensive knowledge of cybersecurity policy, procedure, and regulations. This class should be a basis for understanding some of the behind-the-scenes expertise that helps contextualize non-computer science majors and provide knowledge on security intelligence threats and threat actors while also exposing them to programs and tools used in the field to procure research such as CS 1150 Principles of Computer Science, Topics in Computer Science, Social and Ethical Implications of Computing for non-Engineering majors. Technical writing classes will also help English majors practice a new mode of writing to better understand distinctions between a context for technical writing or nonfictional writing for grants and strategic communications. A marketing writing class, like Principles of Marketing referred to in Table 1, would be another resourceful way of diversifying writing and communication skills because it will give students exposure to various persuasive concepts. Depending on interests, coding and software classes would be resourceful in adding experience to make a candidate more

competitive due to an accumulation of technology-based knowledge. Some course examples would be

- CS 3010 Web Programming
- CS 3300 Software Engineering I

UCCS should also consider creating or implementing an English survey class with an emphasis of technology within literature. Intersectional classes that merge the arts and sciences will also attempt deconstruct the binary that is reproduced within the professional field.

Career Application

English majors as cybersecurity applicants should mix their liberal arts skills with industrial credentials. Employers recognize the diversity of thought that English majors epitomize while also having the knowledge of the technical aspects of cybersecurity (Busteed). Usually having a bachelor's degree in English paired with cybersecurity certifications make applicants more competitive because they have diverse skills sets from the liberal arts while also being knowledgeable of the procedures and regulations of cybersecurity. Some popular professional certifications include

- GIAC Security Essentials
- Certified Information Security Manager (CISM)
- Comp TIA Security +
- Certified Information Systems Security Professional (CISSP) (Liddle)

Students can access these certification courses online located on their respectable housing sites. These are often accessible These certifications provide contexts on the data structures, network products, and concepts that some companies use These candidates understand what is going on

behind the scenes and have experienced what the wonderous world of cyber defense has to offer. They are more likely to be practiced communicator and researcher while also having required professional expertise.

Career Paths

Possible career paths or sectors for English majors in the cybersecurity realm does not inherently require English majors to remove themselves from the arts when entering the technical world of cybersecurity. Entry level cybersecurity positions like Help Desk Technician or Computer Support Analyst have an average salary of \$52,160 (CompTIA). Other career paths include technical, marketing, grant, and policy writing which each require varying levels of creative implementation. Procedural writing within audit reporting in which individuals rewrite research and data in a cohesive, understandable manner, is another possible option for an English major. Similarly, a Global Threat Analyst or Cyber Threat Intelligence Analysts research and write reports to uncover patterns within behavior or data. Strategic communication jobs require

- nonfictional writing that targets public awareness, so one must write in layman's terms without losing specificity and complexity within the situation they are reporting
- writing blogs, case studies, and whitepapers
- communicating cybersecurity and technical ideas to the public

Accreditation reporting jobs in cybersecurity also consist of strategizing ways of effectively communicating and educating audiences in professional and human resource contexts about technical content. Each of these career paths merge cybersecurity with competencies from English, so interests in liberal arts are not stifled in technology. There are a lot of creative outlets

within cybersecurity to further cultivate liberal arts skills in new, compelling contexts. Table 1 displays academic pursuits for specific career paths.

Academic Courses for Career Paths		
Career Option	Average Salary	Recommended Course(s)
Help Desk Technician (Entry Level)	\$52,160 (CompTIA)	CS 1150 Principles of Computer Science, Topics in Computer Science, Social and Ethical Implications of Computing for non-Engineering majors
Computer Support Analyst (Entry Level)	\$52,160 (CompTIA)	CS 1150 Principles of Computer Science, Topics in Computer Science, Social and Ethical Implications of Computing for non-Engineering majors
Technical Writing	\$97,834 (Coursera)	TCID 2090 Technical Writing and Presentation
Marketing Writing (Product Marketing Manager)	\$110,000 (Indeed)	MKTG 3000 Principles of Marketing
Grant Writing	\$65,049 (Glassdoor)	FNCE 3050 Basic Finance QUAN 2020 Quantitative Analysis for Business, Business Statistics, BLAW 2000 Business Law
Audit Reporting	\$79,709 (Coursera)	QUAN 2020 Quantitative Analysis for Business, QUAN 2010 Business Statistics, BLAW 2000 Business Law
Global Threat Analyst or Cyber Threat Intelligence Analyst	\$103,590 (Coursera)	INFS/CYSM 3500 Introduction to Cybersecurity Technologies
Strategic Communications	\$119,743 (Glassdoor)	STRT 4500 Strategic Management
Accreditation Reporting (Specialist)	\$57,614 (Glassdoor)	FNCE 3050 Basic Finance, QUAN 2020 Quantitative Analysis for Business, QUAN 2010 Business Statistics, BLAW 2000 Business Law

Conclusion

Being interested in English and cybersecurity should not require an individual chose one over the other or place more value in a STEM major that is not suitable for one's interests. There are many courses and jobs opportunities that delineate a large range of interests that are applicable to the skills of English majors. English majors have distinct skills sets and competencies that are just as competitive and compelling as their STEM counterparts because of their malleability across different contexts. Consequently, an English major is not limited to a predetermined field or set of interests. One can merge their interests in IT and English into multiple, fulfilling career paths.

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