EUGAIN

Reasons to Become an Informatics Student

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In order to create materials that can truly speak to a young audience, we have decided to produce a set of social media content closer to the target audience's consumption habits. Along with two videos shared on YouTube, four short videos were also created and shared on YouTube Shorts and TikTok. The present document is the text-based supplement for this social media project, composed of the transcripts of the videos, slightly edited for clarity. "Information Technology (IT) jobs are in constant growth. According to the Bureau of Labor Statistics, a 22% increase in demand is projected between 2020 and 2030. This will create more than 400.000 jobs. The variety of positions makes it more accessible for everyone to enter the IT world. Thanks to the wide range of fields that use Informatics, such as healthcare, climate, digital communication, and video games, it is easy to find a meaningful position. For instance, a data analyst collects and analyzes data to make informed decisions. A User Interface designer delivers an immersive user experience by creating beautiful screens. A software engineer builds, tests, and deploys the code. There is also a place for scientific jobs, like researchers and professors, who develop new concepts and tools. In addition, there are numerous advantages of IT, just to mention a few: high compensation, countless benefits, and limitless flexibility. If you are ready for a great future, don't hesitate to step into the IT world! For motivation, we have collected some testimonials from people already in the field."

Professor (Academia), Norway, *Software for a Better Society*

"I am a professor in Informatics. I was introduced to the field of Informatics when I was 16 years old by my Mathematics professor who explained to us how to program a calculator. I stayed in the field as an action to improve my independence and to do a profession where I could have an impact on the world because there were many problems and there were many problems to solve. I enjoy very much working with young people and with those that I believe are the challenges of our society, diversity, environment, and in general, how to develop solutions that improve the lives of the people. The most memorable thing in my career is maybe when we managed to develop a system that was able to exchange many emails each minute at the end of the 80s. It was like magic and it was very memorable when one of my students got a memorable moment. I hope that they work in environments that we are trying to shape here, at the Department of Computer Science, at the Norwegian University of Science. Technology is an inclusive one, it is an environment that stimulates young people to achieve their dreams but this is not up to me. To say, it is up to them. Next, I am planning to do a bit less to be able to empty my head of all the worries, of all the small problems, and to think about more important problems, and to try to be a better mentor and a better facilitator for my team."

Senior Researcher (Academia), Switzerland, *Computer Science in IT*

"The part I like the most about being in Informatics is the creative side. The fact that you can really look into the needs, and real needs of different user groups and look at how technology could support and help them fulfill these needs. The tricky part is when involving the users, to understand them, and that takes time."

Assistant Professor (Academia), Hungary, *IT Education*

"According to my qualifications, I am a high school IT teacher but currently I teach IT teachers and IT professionals at the university. I believe that everyone should learn at least the basics of programming because it can develop problem-solving strategies and methods that can be used in solving everyday non-IT problems. As a professor I love passing my knowledge to the students, both IT teachers and IT professionals because I believe that they will be useful members of society."

Postdoctoral Fellow (Academia), Norway, *Gender Balance in IT*

"What I love about IT is that I get to work on projects that matter, matter to me, and matter to the world. Now there is this idea that I wanted to make a change in the world and because of IT I feel that that is what I'm doing and this is awesome. As a researcher, I get to work in a diverse team. Currently, in my research group, there are people from Italy, Norway, the United States, Bangladesh, from Hungary, so basically from 3 different continents. And that means that I get to be exposed to different cultures, different languages, and different ways of thinking. And basically, we also get to travel a lot, and that means that it never gets boring. It is always something new all the time."

PhD Student (Academia), Switzerland, *HCI for Inclusive Education*

"Informatics can help us navigate modern society. As a designer, I think that's especially valuable and if you are an inquisitive person it's incredibly stimulating and exciting. I believe it's becoming an important knowledge domain not only in itself but also in conjunction with other humanistic and scientific fields, as in my case."

PhD Student (Academia), Italy, *Explainable AI*

"I am a PhD student at the National PhD program (in Al) and I have a Master's degree in Computer Engineering. I chose IT because my IT high school teacher, basically, walked me through the IT field and made me love it. The most memorable moment I remember is one night during my master thesis I remember suddenly waking up with the idea that I developed and published in a scientific workshop."

PhD Student (Academia), Italy, *AI for society*

"I am enrolled in the Italian National PhD in Artificial Intelligence for Society at the University of Pisa. I am a graduate in quantitative finance and insurance. Since my graduation, I have worked as a business and data analyst for almost five years in different industries. At that time data science was a necessity. I wanted to fill the gap in coding skills. But then, during the master's program, my professors helped me to find the right PhD program in line with my academic and professional background and also in line with my research interests. They reviewed my application, and they gave me feedback about my research proposal and also reference letters. I believe that Informatics is a field where I can be creative and I can work on technologies that can improve the quality of life of people."

Professor (Academia), Spain, *Artificial Intelligence*

"I am a professor at Universitat Politècnica de Catalunya in Barcelona, Spain. I am the leader of the software computing research group that is part of the Intelligence Data Science and Artificial Intelligence research center. Our group is composed of 7 researchers who are also colleagues and friends, 5 men and 2 women. What excites me most about my work is doing research in the area of artificial intelligence applied to medicine and lately to mental health. Working side-by-side with my colleagues from both the IT and also medicine and psychology fields and applying your knowledge to help improve the daily lives of the elderly and people with mental health problems is something incredibly rewarding to me."

Professor (Academia), Portugal, *Information Retrieval*

"I am a professor at the University of Porto and a researcher at INESC TEC. In my research, I am interested in developing tools that promote information access and help people search more successfully. I knew I liked math and science when choosing what I wanted to study in higher education. Having an aunt working in this field, very passionate about her work, pulled me to choose Informatics engineering. I ended up loving Informatics. First, it lets you create technology that can potentially improve people's lives. Second, it is very diverse in terms of activities you can do and in terms of teams. You can be in contact with a client for requirements analysis. You can work on the conceptual design of the application, or you can be involved in user interface development. Third, being consistently applied, Informatics lets you connect and learn about new domains such as medical science, humanities, or arts. Fourth, it enables you to build something very straightforwardly. Compared with other types of engineering, it's much quicker to make something work, giving you a good sense of accomplishment."

Professional (Industry), Hungary, *UX Strategist*

"I am from Budapest and I tend to think of technology as a canvas for creativity and innovation to solve issues, big and small ones, like ordering a burger online if you are hungry, by managing money in fintech services, saving lives by using cascade data or just having fun and memorable virtual experiences. IT is the largest tech industry in the history of humankind and is changing everything around us and not lastly is the pretty up per lifting feeling to being part of. And not to forget, understanding the nature of technology makes the future less scary for me. Without any question, technology has some dark sides also to cope with, however, I firmly believe that only technology can save us from total destruction in the long run. IT is huge and growing at a very fast pace for very diverse, relatively happy opportunities to work. I'll have to say every company is an IT company or something similar as we go through digital transformations, even the flower shop at the corner which is using e-commerce home delivery and digital invoicing so you can join enterprises, tiny shiny startups, or local SMEs, as you wish. You can do research, design, engineering, digital marketing, people management and so on and so forth. Based on your soft and hard skills, interest, professional threats, future plans. So, do not miss to join the wave, believe me, you won't regret it."

Professional & Researcher (Industry), United Kingdom, *Inclusive Digital Learning*

"The reason why I chose IT is because I love computers and technology. I have been immersed in and exposed to technology since I was a very young child and I believe that it is a very powerful tool that can be used to create user-friendly and inclusive experiences for many stakeholders and users. Specifically, I'm working at Sponge UK. It is a company based in the United Kingdom where we try to create bespoke solutions for a series of customers and clients and our main objective is to reach as many customers and users as possible and to make sure that our products are inclusive, user-friendly and efficient."

BSc Student (Academia), Ukraine, *Cybersecurity*

"I studied at the National University of Radioelectronics in Ukraine and I will get a bachelor's degree in June. Why did I choose an IT sphere? My teacher showed me my hidden potential in IT and after that, we started a science project about 3D modeling in Blender and creating applications in the Lazarus environment. He was really decisive for me to choose a career in IT. What do I enjoy the most? I think it is being a student because I have plenty of opportunities and I especially love working in a team on different projects and also I can be quite creative and uncommon. The most memorable thing that happened to me in the field, just speaking from my mind, I remember working on my project with my supervisor. This is florify idea, this inspiration, and at the end of the scientific work, we were so proud and determined. I think that this emotional part of the activity makes me happy. What about working environments? Frankly speaking, a lot depends on the goals and the mood of the team. At the same time, we can work together sharing ideas, etc. and we also can hold different backgrounds. Nowadays, this balance is extremely important. What I'm planning next? The main thing for me is to enter the master's degree programme and to continue working on scientific projects and after that, I want to work as a graphic or 3D designer."

Engineering Director (Industry), Switzerland, *IT Engineering*

"I work as an engineering director and I've been in IT since 2005. I really enjoy working in IT because you can really solve complex problems and you can have and discover a lot of big challenges that you can address and you have all the tools and all the brain power to do so. So working in IT is really special in a sense because you can really reach any part of the world. With all the connections, you can really work in remote teams. You can really get social if you want it to be, and you have really a variety of tools to enable you to work and be as efficient as possible. So IT is a really colorful world and really nice place to work in with its challenges, of course. But I definitely would encourage anybody who is considering joining this industry sector to join and get experience, get to know the tools, get to know the people, and really make sure that the industry's getting stronger and stronger with every contributor."

PhD Student & Professional (Industry & Academia), Poland, *AI in Economics*

"The reason why I started a career in IT can be described in one sentence: just find a job that you love and you will never have to work a day in your life. In

such a dynamic environment you need to be up-to-date and this is what is really driving your personal development. Every single day, I get to learn something new. Developing new ways to solve the challenge is also very rewarding: it makes us aware there is not just one way to do something and we should always try to find the most effective solution. For me, the most interesting fact about Informatics is that there is still so much to be discovered and this is what is driving me every single day."

Associate Professor (Academia), Serbia, *Computer Science in IT*

"I work as a professor at the Department of Computer Science, Faculty of Mathematics, University of Belgrade. I love Informatics as it is creative like art but it's much simpler to accomplish your visions. You can imagine whatever you want to do and the computer is the only tool you need. You can choose to work on a project that can make people's lives better. Another thing that I love about my job is that I have a chance to teach and transfer my knowledge to young people. This positive energy that exists between me and my students is something that keeps me going."

PhD Student (Academia), Norway, *Interaction Design*

"Hi, you could say that my path in exploring computer interaction design started a little bit late because I'm right now I'm beginning my PhD in computer science here in Trondheim but despite having a background in interior interaction and communication design I've always been intrigued of approaching a problem, a concept, a phenomena from the technological point of view. In fact I've always been curious about the idea of exploring possible deployment, and implementation and also about the fact that these things can have on user interaction. In fact, I would like to develop powerful interaction paradigms in order to enhance usability for what concerns different kinds of technology and in particular the ones in the learning field."

PhD Student (Academia), Norway, *Health Informatics*

sentence was my starting point in order to study health Informatics. I did my Master's thesis in one of the biggest Pediatrics hospitals in the Middle East in Teheran; after that, I came to Norway to improve the care pathway for multiple patients or patients who have several diseases together. Based on many statistics, we see the Pareto rule in multiple patients. For example, we can see these patients are only 20% of the hospital's patients but they consume more than 80% of its resources. So I came to Norway to work on this project, since health care is interesting for me and I think NTNU is a good university for research and other things. I work in Health Informatics and mainly I focus on a subject that is called process mining. Process mining can be considered a subdiscipline of data mining in the sense that our goal is to find workflow activity in data. So, for example, the care pathway of patients in the hospital can be a process, therefore our goal in this project is to find this process and understand how we can improve it. The overall goal of the project is how we can find a better treatment for these patients, multiple patients or patients with several diseases together."

Master Student (Academia), Norway, *Data Technology*

"Have you ever wondered if an app could increase diversity and inclusion? We are currently working on a Master's thesis about intersectionality in computer science. We are going to be developing a mentorship program that will help increase inclusion for everyone in Informatics. During our thesis, we will get to do interviews, user's tests and also design and develop an app. For our thesis, we will utilize both our theoretical and practical skills to address the Sustainable Development Goals and also promoting software for a better society."

Professor (Academia), Switzerland, *Data Science in Economics*

"During my bachelor's degree, the professor of Informatics dedicated a lot of time to answering my curious questions and was challenging me to code small 'hello world' type of examples. Note: My bachelor was in Economics, so Informatics was a single exam I had to take. So a mix of curiosity on my side and availability on the professor's side. My curiosity has always been encouraged and motivated by my parents."

PhD Student (Academia), Switzerland, *Informatics*

"My main motivation to start a career in Informatics was my mom, she always believed that this would be the future. She worked as a banker and saw how her job was strongly dependent on Informatics. What motivates me daily is the idea of contributing to a highly competitive community as a woman. I'm from Morocco, a country where girls get married soon (around 22, or 23 for educated girls and very early around 17, or 18 for non-educated girls), and doing a PhD in Informatics is a pride for all those around me."

PhD Student (Academia), Switzerland, *Software Engineering*

"I want to contribute to the project, but I never heard before joining USI that Informatics is only for boys. Neither I felt any discrimination during my bachelor's and master's studies in Bolzano-Bozen (South Tyrol, Italy). I only started to hear this kind of talk at USI. But I never felt anything in my research group, our institute, and the whole USI in general. Maybe this sentence, expressing my thoughts could be beneficial: If there is any discrimination, we should be strong and stand for each other and always do everything possible to stop it. And it does not matter which gender or sexual orientation the person has. Any kind of discrimination is wrong per se, and we should show the world that this way of thinking is mistaken and that all humans are equal and everybody deserves the same treatment. When I was a child, I saw movies with hackers and always wanted to become one. Since I also liked mathematics at school but did not want to study pure mathematics, I have chosen to study Informatics. After I finished my bachelor's studies, I realized that I probably would never become a good hacker and already got very interested in Software Engineering. Hence, I decided to do the master's in Software Engineering, and later the Ph.D."

Master Student (Academia), Switzerland, *Informatics*

"For me, it was the same thing that both hindered and helped me: I was a bit

discouraged by the way I was looked at by my classmates in my bachelor's courses - as if I couldn't possibly do well in an Informatics course. Whenever I helped them with something I was double and triple-checked and then they acted surprised when they figured out I was right. But at the same time, I also got encouraged by this in a way - because I knew I was capable and so proving them wrong was an added challenge/satisfaction."

Master Student (Academia), Switzerland, *Informatics*

"Encouraged: What? Apart from being curious to learn about Informatics (such as from popular documentaries such as "Alpha Go") a strategic reason was the demand for Informatics personnel, hence, future jobs and financial security (after studying a B.A. Communications, which of course is not as financially secure). Who? My father (working in Informatics) Discouraged: What? Being intimidated by mathematics (not my strong suit). Who? No one, everyone was supportive thankfully. Hope this is helpful and best luck to you for the project. May many women be encouraged to study Informatics as well, if they are discouraged by any possible gender bias."

Postdoctoral Fellow (Academia), Switzerland, *Computer Science Engineering*

"When I told my parents that I wanted to study Informatics Engineering as my MSc, my father was really happy. Being a professor of Informatics himself, he told me that he couldn't help supporting my decision with great enthusiasm". "When I told my parents that I wanted to study Informatics Engineering as my MSc, my mother was surprised. "But, Informatics has been the exam where you got the lowest grade in your BSc, are you sure?" she asked me. But I was sure, and she soon realized that it was a great idea".

Bachelor Student (Academia), Switzerland, *Informatics*

"Here is my experience. Who/what encouraged me: I was mostly interested in it because of the various job opportunities I could get in the future because everybody said to me that Informatics is everywhere nowadays. Who/what discouraged me: In high school, I was in a class of 15 girls with a non-scientific orientation. When I told them I was going to study Informatics, they were very surprised. They told me that Informatics is too difficult and that they wouldn't ever understand anything about it. They didn't mention anything about gender."

Bachelor Student (Academia), Switzerland, *Informatics*

"I believe girls/women are discouraged from studying Informatics at a very early age. When I was in elementary school, our teachers told the guys to help the girls with computers (apparently, girls could not understand computers). Knowing that technology was "only meant for boys" discouraged me in the beginning. In high school, the problem continued because girls tended to choose arts or languages, while on the other hand, guys preferred mathematics or Informatics courses. What encouraged me to choose Informatics was my fascination for computers/technology from a young age. Even after knowing that Informatics was a degree "for men"

(because there are few women who study Informatics), so I decided to do what interests me. Knowing of a preexisting stereotype should not be a reason not to pursue an interest or dream."

PhD Student (Academia), Switzerland, *Mathematics in IT*

"I didn't study Informatics but Mathematics so I don't know if this will be of help for you, maybe just see for yourself. One of my main motivations for studying Mathematics was that I thought and still think that Math is behind almost everything if you just dig deep enough. So if you want to understand the world this is what you have to know about. I think my biggest fear was that I wouldn't be "good" or "smart" enough to make it through to a degree. So I was considering studying something else right from the beginning to not have to go through potentially failing."

Bachelor Student (Academia), Switzerland, *Informatics*

"I will start with the person who inspired and encouraged me to pursue this degree, who was my boyfriend. I was really doubtful because of all the stereotypes and judgmental thoughts/critiques women in Informatics receive, and thus I was not really sure whether to pursue this career or find something else that might "fit" me better. My boyfriend gave me a big push and told me not to worry and that there is no such thing as "men are better in Informatics than women"; that this was a big lie and that as long as I would try hard I would succeed. He believed in me and then day by day I started believing in me even more. As for the person who discouraged me, there was this family friend who came by one day around my university application date, and during the conversation, the topic of my future career was brought up. This person told me that I could not succeed in this field as a woman and that the only way I could succeed in this field was not an honest way (that sentence implied a lot of things I did not and do not want to think about). However, I found the strength to do what I want and pursue this dream of mine and here I am today sharing my experience."

PhD Student (Academia), Switzerland, *Informatics*

"Who/what encouraged: This might be peculiar, but I was really encouraged by the fact that it was uncommon at the time to be a girl in Informatics. It was challenging and frightening but at the same time motivating and interesting. Who/what discouraged: I was discouraged by the lack of role models of women in Informatics in my society and by the field's stereotypes, which often raised the fear of not belonging".

Professor (Academia), Switzerland, *Informatics and Numerical Methods*

"In my case, nobody encouraged me or discouraged me. At the time I had done math (there was no Informatics yet at the University) and Informatics was the new thing to do, so cool. I had taken a class in Numerical Analysis and I had liked to see something be done, a program (Fortran) that ran!"

Explore the insights from these testimonials in our peer-reviewed publication

Abstract: There is a constantly growing need for skilled professionals in the computing field, which poses challenges for finding the right people for the job. According to the 2022 Digital Economy and Society Index, 55% of companies have problems filling their tech positions. At the same time, the computing sector is going through a diversity crisis, as the majority of its players are Global Northern, heterosexual, white, able-bodied men. Technology permeates our lives, so a lack of diversity in the tech industry, especially when designing software, can lead to bias and exclusionary user experiences. As a consequence, we need to attract young people - for instance, Generation Z (GenZ), born between the mid-1990s and the 2010s - to computing majors. Moreover, there is a need for actions with a retention plan and a strategy to guide a more diverse group toward leadership roles both in academia and industry. Even though the awareness about Diversity, Equity, and Inclusion (DEI) is continually being raised, interventions that focus on inclusiveness are still necessary. With the present paper, we aim to contribute to a better alignment of how to design interventions for including younger people in computing. According to research, GenZ cares about social values and a meaningful contribution to society, that is, DEI, as part of their work. In this paper we are presenting an intervention project, designed to increase DEI in computing, as part of which we collected testimonials by stakeholders working in computing. After the completion of the data collection, we carried out the analysis of transcripts in order to investigate to what extent the experiences listed by CS professionals and the interests of GenZ align with one another. Applying diverse methods of cross-checking, we confirmed the presence of social aspects in the lived experiences of CS professionals. Findings show that professionals in the field recognize computing's social embeddedness, which aligns with younger students' values and expectations and confirms that computing is a valid choice to achieve their goals of making a positive change in society. This study is part of a larger effort proposed and realized by EUGAIN, a Horizon Europe-sponsored COST Action, whose purpose is to create a European network that enhances gender balance and diversity in the field of computing.

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Link to 3-minute YouTube videos:
"Why Choose IT? - EUGAIN Young Researchers"
Why choose IT as a field - Inspired by EUGAIN - YouTube

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