the
Enigma
Factor

Breakfield and Burkey

BOOK 1: Award Winning Techno Thriller Series
When time runs out ...

Her watchful eyes followed rapid movements across the bright flickering monitor as each piece of the puzzle moved to its assigned location. Her subdued smile increased as each piece was transmitted. She knew that Q on the other side would have them captured and reassembled seconds after they arrived at their destination. This was the last of the updates for the communications interceptor routines.

She always kept her word and honored her family responsibilities. Complex communications were her specialty, and her adaptations kept the family business ahead of the world governments. Even her day job of creating programs with the U.S. telecommunications leader was not at this level due to the bureaucracy they operated under. Over the years she had tried to enlighten them, but it was a slow road of acceptance. This was a part-time outlet for her creativity and it helped her maintain balance.

Pulling her eyes away, she returned to her primary work screen, verifying that the recompiling of those programs was almost finished. The documentation for her departmental changes was already completed, with updates to her team members also
issued. Her ability to compartmentalize the two efforts, both for good causes, spoke to her genius. She was slightly distracted by the vibration of her cell phone, which she retrieved from her pocket with the same efficient fluid motion.

“Hello, Julianne here.”

“Dobry Wieczór!”

“English please, Father. Good evening to you too.”

“Of course, make it harder for me. Q is telling me you are sending the final versions as we speak.”

“Yes, they are finished, Father. I need to focus on an upcoming project for work over the next few months, so requests need to go elsewhere.”

“Why not quit that job and come home. I would like to spend some time with you as well as get to know your son. How is he doing with his studies? Is he ready for our family now?”

“He is doing well and working hard. He is far more brilliant than any of us. But he knows nothing of the family business as I’ve repeatedly told you. Not yet. I want him to have a chance to make his choices rather than the family make them for him. My son, my choice. You promised me, Father, and you have never broken a promise to me.”

“Yes, you’re right. We continue to watch out for you and him, but I want to know him before I die.”

“You will next year. I will bring him over, and we will explain things to him together. Just as we agreed. You will be so proud of him. I have only taught him to be the best, to be cautious, and to trust little in a world of bits and bytes. Keep in mind he may choose not to be a part of the business. He is his own man.”

“Speaking of careful, have you heard any more from the Sergei character, or has he finally stopped trying to recruit you?”

“That prick! He has not come around for several months. He doesn’t think I can help him after the crap programs I provided
to him. He actually called me here at work and told me I couldn’t program my way out of a paper bag. I believe I threw him way off track. You are still monitoring his activities?”

“Yes, of course we are, along with several others. He is up to something, we know. He will eventually defeat himself.”

“Good. As it should be for garbage such as him. Is the rest of the family good? Any new marriages or births I need to know about?”

“No changes. We are all sad that none of your son’s generation have fallen in love or found a way to make the next generation. And you, my darling girl, do you need anything? You know I would gladly pay for your efforts on our behalf for these programs.”

“I make a good living, Father. I have never asked for family money. My contributions are out of love, as you well know, and the belief that you help make the world better. I need to finish up here and get home to my son. Dobranoc, Father.”

“Dobranoc, Daughter. We will talk soon.”

Julianne finished wrapping up her efforts and closed down her work machine and her laptop. The laptop she stored in her briefcase, as it was always kept within reach. Turning off the lights as she stepped out and locked her office door, she wasn’t surprised to see the others had already left. Putting on her jacket, she took the elevator to the lobby and smiled as she thought of getting home and having the weekend to relax. Maybe she and Jacob could take in one of the Off-Broadway shows. They both deserved a little fun.

It was dark and the street deserted, though damp from heavy dew. Setting her gait for the twenty-minute walk home, she felt herself relaxing as her legs stretched out after sitting at her desk most of the afternoon. Her thoughts wandered to the preparation of supper as she crossed the street. As usual she was intently focused on reaching the destination and not her immediate surroundings.
Over the years she’d learned to focus all her intellectual power on single issues or problems, to the exclusion of all else. This ability to focus her mind had served her well, but tonight it betrayed her. She didn’t even notice the car starting up, then aggressively revving the engine. The car lunged out with its high beams focused directly toward her face, leaving her disoriented and blinded, causing her to freeze mid-stride. All those lessons delivered to her son while he was growing up about looking both ways and being aware of your surroundings completely failed to register in her paralyzed state.

Just like the spell cast by an experienced poacher with a high-intensity search light designed to blind and pause a deer, so too did the car’s high beams render her immobile. The sound of the squealing tires was not due to a concerned driver trying to stop in time, but rather a predator accelerating the machine to lethal speed. In that all-too-brief window of time that she froze, all possibilities of her future life had only one outcome. The car viciously struck her, killing her as it rolled over her body, crushing her briefcase as well. Her last thought was of Jacob.

The predator brought the car to an abrupt stop and studied the scene for any signs of life in the rear-view mirror. No amount of medical treatment would change the life pooling onto the pavement from the brutal crushing. Satisfied with a job done right the first time, the predator laughed like a madman. The car sped away with no pause and a driver with no remorse.

The investigating detective could find no evidence to change the finality of a random hit and run. She was interred with a quiet service attended by her priest, her son and his friend.
“I’ve got you now,” Jacob rumbled at his screen. “And you’re mine.”

The blue-white glow of his flickering screen provided the final elements of the solution he’d stalked for days, or rather nights. His instincts were right on target. He’d found what he could now see was a bigger problem than the hacker chat rooms had thought. He was damn lucky to have found this one.

Jacob methodically reviewed all his traces to verify that his tests were valid. The door had been wide open. He muttered to himself about the vulnerability of Open Source and applying it without thorough testing. Yep, he had the proof. Good. He had found it for himself but felt the moral necessity of giving back so that others could avoid a pitfall. Jacob did not like seeing others taken for a ride because they foolishly over-trusted. Humans were so vulnerable.

Shifting windows on his screen, he worked through the code corrections he had begun ten nights ago. Satisfied with his
recommended modifications, he completed two more extensive tests, just to be sure. Not only did he demand programs that worked correctly every time when his name was on the line, he insisted on them being better than perfect. Nothing could replace the overall sense of accomplishment Jacob felt for a job done right.

As he waited for his program changes to compile, his thoughts drifted to his mom. She had taught him that if it was worth doing, then excellence was the goal.

“There could be lives at stake,” she’d always said.

He never could get why she always made it a life and death thing, but as he had grown older, he’d guessed it was for emphasis. It was just her way, opinionated and firm, as well as how Granny had raised her. Boy, he missed their discussions. Both of the ladies that had raised him were fine programmers and communications experts in their own time. His mom’s recent passing pressed into his thoughts. He pushed away the anger that came with that thought. After four months, he had only started to be able to concentrate again. He couldn’t go there now. This find he had made was too important.

The recompiled fix was retested, and he wrote up the required narrative. Perhaps a little more formal than some other posts, but his name, at least his cyber name, was on it. No one was left to take pride in his name or his ability but himself. He could be true to himself. Mom and Granny would be proud.

He was a hacker. By definition that could be stated as a person who breaks into computers and computer networks for profit, in protest, or because they are motivated by the challenge. Today the subculture was actually part of the open community. Plus, there was the whole White Hat versus Black Hat controversy. Jacob considered himself a White Hat, part of the group of security experts who referred to Black Hats, or computer criminals, as crackers rather than hackers.
His machine chirped. He paused and opened the chat window.

Buzz: ping!
JAM: hey, Buzz. Whatcha need
Buzz: Hey man, need some help with some code. I believe I know what is needed, but I will take your opinion
JAM: Little busy here Buzz, really don’t have time.
Buzz: Loser! What’s the matter, not up for real work? So much for being a bud
JAM: Ok, ok send it to me, I’ll make some time
Buzz: Good man. Need by early morning, see ya!
JAM: Where is my P.O. for this work? 😊
Buzz: lol

“Why do I let Buzz suck me in every time?” Jacob muttered. Going back to the task at hand, he finished his commentary and then posted it and the corrected program to the website. Maybe someone would notice his penchant for detail. Today, at almost thirty, he had a good job with a leading information security company, PT, Inc., as a security penetration-tester, helping companies avoid information compromise. Some would say he was too focused on work.

Laughing to himself, he jumped over to his email account window. He found the note and attachment from Buzz. Great, Buzz wanted him to review the coding routine for interest calculations in a new program for his bank. Reading the requirements, picking through the code Buzz included, Jacob saw error after error.

“His effort here is so junior,” Jacob muttered. “Buzz tries, but he is so out of his league. Granted we were college buddies, but this is really bad.”

Jacob had been lucky with his scholarship to MIT, whereas Buzz had basically bought his degree.
“Why is it he seems to just try to copy old errors and then fails to work through them to make them right?” Jacob mused. “Okay, more help just like during school. Geez, I can't believe he used that old crap.” Opening the chat window, he pinged back.

<table>
<thead>
<tr>
<th>JAM: Buzz, did you even try man</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzz: What do you mean, that is great code, just different style from you</td>
</tr>
<tr>
<td>JAM: Did you copy and paste from somewhere else, rather than code to the requirements? There is a trap statement in here that comes from the open source I fixed two months ago for you, it is wrong here</td>
</tr>
<tr>
<td>Buzz: no man, maybe you opened the wrong file.</td>
</tr>
<tr>
<td>JAM: I will fix it, I will also add a file for routines you should look out for in other code. Could cost your bank a fortune.</td>
</tr>
<tr>
<td>Buzz: Thanks bud, drinks/food Friday!</td>
</tr>
</tbody>
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Jacob continued for the next few hours correcting Buzz's code and redoing portions to meet the requirements. Too bad he hadn't landed the job Buzz had. The money was so good. Of course, Buzz also had the family influence. It hadn't hurt that Mr. Buswald was connected in the bank and financially set. Buzz did not have the head for finance like his dad. He was educated and liked the idea of being a great programmer, but in all reality, he was only good enough for basic programming. Actually, he might be better at running a team if he wasn't such a pain to be around. He still pulled goofy high school tricks and made cutting comments that tended to alienate people. Ah well, Buzz did help him when his mom was killed. Jacob owed him.

Giving himself a pep talk, Jacob thought he had nothing to complain about. He liked pen-testing, considering it one of the best jobs he'd had so far. Jacob liked the idea of trying to get in
the head of a Black Hat who beat down the paths to breach the security. He liked encryption and security aspects of computer programming that his mom had introduced him to, as well as logical system overlaps. He firmly believed in a layered defense approach to data access and securing the resources of a company.

Jacob was very into systems and the various overlapping systems at play. If he could understand the system at play, he could make it work for himself. The age of information was really heady when you got into the bits and bytes like he was. Stopping bad guys from wreaking havoc made him feel like a cyber cowboy.

He checked the requirements one more time, going down the list to make certain each portion was correct to the specifications. Good, one more testing run and trace verification and it would be done. He would send it to Buzz with notes on process that would likely be ignored.

As the test was running, he again drifted to thoughts of Mom and her dedication to him, passing down her knowledge on things like her logical approach to systems and her belief that there existed systems on top of systems as technology achievements continued to evolve.

It had been just the three of them for much of his life. After Granny passed, the two of them remained in this house. Such a pair of focused and secretive ladies he doubted he would ever meet again. He had little idea about his European family roots.

The story he'd been told was that Granny came from Poland as a young woman at the tail end of WWII. Granny lived in Switzerland for a time and raised Julianne. When Julianne moved to the United States to have Jacob, Granny came along to help. Neither of them volunteered any information nor answered any questions on how they got into this country.

The only thing Granny would admit to was that Julianne was her proudest achievement. Of course, she said it in Polish, German,
French or English, depending on which language she wanted him to work on. As such, the household had always been multilingual in reading, speaking and writing. It had helped him though, and he missed the conversations with them. Programming was always in English, always with process, and always focused. Like mother, like daughter. Where Granny had left off training him, Mom continued until her last breath. But the family, their involvement in the war, and his other relatives were totally unknown to him. Jacob had tried some Googling, but he simply didn’t have enough information to go on.

Jacob had been told that Granny was born in Poland in 1925 and moved to Switzerland with her family for a time escaping the Germans. She came to America to support Julianne and her baby, Jacob. Very little was discussed about Granny and her time post WWII. Too many years of working, programming, struggling, prior to coming to New York, he suspected, caused the silence on her past. There were no details about her early life and definitely no mention of family. Granny was strict in wanting her daughter Julianne and then Jacob to learn the right way of doing things. She was delighted with Jacob’s ability to let fingers fly across the keyboard of his earliest computer. She taught him a lot about working through various programs. She had learned from the ground up, so her teachings were invaluable. Mostly she loved him and let him find his own way from within a grounded framework.

Mom was a carbon copy of Granny. She taught him even more as her work took her to different levels in systems design and security aspects. She too never spoke of his father but indicated that Jacob was a product of an intense love affair during an extended trip to Europe in her twenties. Granny had sent her to a special learning symposium, not to fall in love, she’d often mentioned as she hugged her daughter. Jacob was taught to save
money, and together they lived a frugal, efficient lifestyle, which Jacob continued to subscribe to. College without a loan debt had been the focus for Jacob for a long time. The one bump in the road was during his college application where his birth certificate only listed Julianne. The discussion on that was a wall of silence that never collapsed despite repeated queries.

The testing completed as he glanced at the screen. He zipped it up and sent the files to Buzz, confirming the Friday payment of drinks and dinner. Actually, he was looking forward to a night out. He rarely went out, feeling that dating was a bit expensive until he could provide for a lady. Plus, no one had really caught his eye other than a mild appreciation for pretty, intelligent women. Besides, now Buzz would buy and he could continue to save.

Jacob crashed into a dreamless sleep. He awoke a scant four hours later to an unforgiving alarm. Jacob dashed through the shower and as he shaved off the morning shadow, he stared at himself in the mirror. He had helped Buzz last night, or this morning rather. Chuckling, he imagined the look on Buzz’s face, likening it to biting into a lemon, when he reviewed the code and commentary. Maybe Buzz would learn a bit, Jacob thought, with the final comb of his thick dark hair.

He grabbed a fast breakfast of orange juice and Cocoa Puffs, typical bachelor fare. Stuffing a couple of apples and a water bottle in his backpack, he loaded up his work PC and locked up the townhouse. The morning was crisp and clear for New York in the summertime so he jumped on his bike, adjusted his backpack and began the twenty-minute ride to work.
CHAPTER 2

We do not look for fame!
Fame is only vanity.
Outcome is the goal.

Jacob arrived at work with enough time to grab some tea at the coffee shop in the lobby of his building. Julie behind the counter had been here every day since he began this job. She was a pretty girl who always had a nice smile for her customers. Jacob thought she was sweet, even if she was a little too perky for him at times. She always recognized him, though truth told, he essentially took her for granted.

“Morning, Jacob, do you want your usual tea?” Julie asked, throwing him a smile that should have dazzled him but which he totally missed.

She gave him the daily once-over. She liked his six feet plus athletic build and strong, determined jaw, and had often fantasized about the possibilities of a night with him outside these interactions. What she wouldn’t give to run her fingers through his thick dark hair and see if it felt as rich as it looked. He was nice enough even though he was oblivious to her flirting.

“Ah well!” she sighed.
“Hey, Julie. Yep, that would be great, thanks.” Jacob smiled at her but mentally went back to organizing his morning. He knew he had to finish up the Citybankers review project and review Tom’s pen-test for World Bank. A team meeting was also on his morning agenda.

“Here you go, Jacob. That’ll be two dollars and twenty-six cents,” she said as she handed him his tea and a fresh muffin along with another dazzling smile.

A little extra notice would be nice, she silently screamed. Some guys were just too into their thoughts to see what was right in front of them. Someday, he will notice me, by hook or crook, she smiled.

“Here you go, Julie, thanks,” Jacob handed her three dollars and picked up the tea and muffin, not acknowledging that he was truly getting a deal. He turned to walk away toward the elevators when reality aligned.

He turned and smiled at Julie, “Hey, thanks for the extra snack. You’re sweet.”

She beamed and gave him one more megawatt smile and returned to the grumpy customer next in line.

Entering the elevator with a few folks, he punched the 28th floor. The elevator stalled until he inserted his access card, and then the doors finally closed. The group inside was quiet, obviously all still waking up or focusing on their day ahead. Exiting on his floor, he used his security badge with biometric hand scan to enter the PT office space. He was still a bit early and most of his teammates weren’t in yet. He did say hi to his boss, Brian, as he passed his office headed toward his own cube.

He had no sooner connected his PC when Brian leaned over the cube wall.

“There’s a team meeting today at nine-thirty in the big conference room. I am handing out projects for the next month,
Jacob. I wanted to warn you in advance that I expect you to head up the team review for the major New York bank project. We need to put a bow on this one and finish it this week for billing out. I really don’t have a long-term project for you yet, but there is nothing to worry about.” Brian’s confidence was catching.

“Sure thing, Brian,” Jacob stated with the same level of conviction. “I’m always happy to work on any project assigned.”

Jacob wanted to mention his success in locating the problem with the Open Source programs, but it really was not applicable to work. Jacob didn’t think Brian would even be interested. Brian was so ready to retire in a couple of years that he always seemed to simply want to keep things upright and on course. In Jacob’s mind though, Brian had been supportive, like a mentor.

Jacob finished up his current project just in time to attend the team meeting. Jacob was the newest member of the PT team, and he felt like he was still being tested and measured in his performance on the team. He said little during the meetings and pretty much kept to himself, outside of team projects. Granted, the other team members accepted him and often sought his opinion on specific items, but the camaraderie was work-related, not personal. He knew that was his choice, at least for now. Yep, too much work and too little play made Jacob a dull boy.

He liked pen-testing as it provided a way to use his imagination to think like a bad guy and then apply practices to prevent bad guy security breaches. Over the last two years he had found and fixed many potential breaches. Being a part of PT, Inc., meant he was in a fairly elite position, which was a great boost to his career. But PT was smaller than he had originally thought, and they were so regimented in process and procedure that at times it felt like the team was not getting ahead of the curve. The leaders within the global financial community frequently used PT to check out problems in advance, but Jacob felt they could
do more. Early on, he had offered some suggestions on how to be more proactive. For the most part Brian had smiled at the suggestions and asked him to keep the ideas coming but had maintained the accepted tried and true procedures.

Initially, the other members had tried a bit of interaction at a more personal level. Jacob had declined most of these offers to pursue his long-term interests. He was what was considered a full-fledged geek. When he wasn’t working on project assignments with due dates, he continued personal learning to hone his skills.

As Brian had forewarned, Jacob did not get any of the new projects, and a couple of them sounded like a lot of fun. He wasn’t disappointed per se, just wanted more challenges. He knew he received the review assignment because it would be polished and turned over to the customer on time. This had been Jacob’s trademark thus far with PT, Inc. Brian seemed to like setting him up to interact with the rest of the team, collaborating on different projects, yet not be directly in those projects. Jacob always found this difficult unless someone on the team came to him. Dipping in others’ projects uninvited was not in his DNA, unless he saw a potential problem.

The remainder of the week he completed his projects and turned over the final deliverables, putting the proverbial ‘bow’ on the New York World Bank Group project. Jacob had the ability to focus on his work projects and tune out the personal, except when things were slow. This week had been busy enough that nights were spent eating at home and crashing. The ten plus hours per day meant he hadn’t had time to visit many of the chat rooms he frequented or find another issue to track down for the Freeware World chat room.

Buzz of course had emailed his thanks for the suggestions to his project and had commented that he did not appreciate the
jibe. He confirmed meeting up at Elmer's for beer on Friday evening.

Jacob thought briefly about the software program fix with the detailed discussion paper and code he had submitted last weekend, wondering if anyone had a chance to review it yet. He laughed to himself. It was so unlikely that he would even know, outside of comments from the chat rooms, if anyone took his submittal seriously. It was the fourth such submittal he had made. To date he had heard nothing back on any of them. Perhaps that was the way it worked. He had been anonymously praised with the second find through a chat room, but it was a mere blip within the ongoing conversations. Cyber chat was a lot like conversing in the middle of the floor of the New York Stock Exchange, and the old adage still applied. If digital conversations fell on the information forest floor, would anyone even notice?

Refocusing on work, the remainder of Friday was spent on items that were needed for other projects to close out. Brian seemed pleased with his project submittal for the major New York bank project, indicating he had done a great job. Wrapping stuff up and thinking of the new hunts for problems that he might take on for the weekend, he headed home. As he passed by the coffee bar in the lobby, he gave Julie a wave, telling her to enjoy the weekend. He totally missed her flash of smile with good wishes for his weekend, when a text on his cell phone said Buzz would meet him at seven at Elmer's. Jacob smiled at Buzz's timing, knowing he could take his backpack home and catch a cab. He liked being on time, another thing Mom had insisted upon.