

**UNCOMMON
STOCK**
VERSION 1.0

ELIOT PEPER



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*“To my fiancée and best friend Drea
whose support and encouragement made this possible
and to everyone who’s ever dreamed of forging their own path.”*

Mara Winkel turned onto the muddy single track and lifted her body off the seat as her mountain bike plunged down the slope through the aspens. It jolted up and down beneath her, the suspension struggling to keep up with gravel and rocks. She yanked the handlebars to the right to avoid a nasty root. Mara quickly corrected her course to keep her front wheel on the two-foot-wide path.

She accelerated as the track cut down the slope at a sharp angle, sucking in a deep breath of Rocky Mountain air as the bright yellow leaves and white trunks flashed by. She lived for this, adrenaline pumping through her body, complete mental focus, and high-speed natural beauty. What more could a girl want?

Craig let out a “Whhooooopppp,” as he launched down the path behind her. He was fast but she had enough of a head start to keep her lead to the bottom.

The course dropped off into a steep switchback and Mara threw her body to the left and torqued the front wheel around hard to the right to make it through the turn. She raised her body farther off the bike and hit the next section of rolling bumps, catching some air in between each one. The suspension thumped rhythmically and she jerked the bike up onto the mossy side of the path to avoid a large mud puddle.

As Mara turned around the next switchback, a small clearing dropped away from the bottom side of the path and she had a clear view of the surrounding mountains awash in textured patches of green and yellow, battling for deciduous September supremacy. The white trunks of the aspens flashed up again as the track dropped into another thick grove.

It took half an hour to get to the bottom of the mountain. By the time Mara sped through the last section of the trail her quadriceps burned and her knuckles had a death grip on the handlebars. She came around a turn and jumped the bike up over an angled rock in the path. Her front wheel landed on a bare aspen root and skittered to the right along the slick wood. Shit.

She desperately tried to wrench the wheel to the left but the bike nosed into the ground and her momentum carried her up and over the handlebars. Goddamnit. She was in the air and her stomach instantly turned into a roiling pit of butterflies, instinctively clenching her jaw so she wouldn't shatter her teeth on impact. The green-brown blur ended abruptly as she hit the ground so hard it knocked the wind out of her. As she cleared the cobwebs from her head, she realized she was lying in another muddy puddle that tasted like dirt. Oh well, what's fun without a little danger? Ever since the situation with her and James' family she'd always liked adrenaline.

She rolled over and spat, heard a metal screech, and then "Fuuuck." She lost all of her air again as Craig's shoulder slammed into her stomach and he landed in the same puddle. Shit, she had forgotten he was so close behind her. Stars glimmered and her vision narrowed as she gasped for breath again.

After a few seconds her sight returned to normal and she turned her head to look at Craig. He was spitting out mud and looked up at her looking at him and then they were both laughing and laughing as the cold rush of adrenaline surged through their systems. He leaned over and kissed her hard on the mouth and she could taste

sweat, mud, and Clif Bar. She kissed him back and then punched him playfully in the stomach. “I thought you were supposed to be good at this whole mountain biking thing.”

“I wasn’t expecting you to be one of the obstacles.” He raised an eyebrow.

“Dynamic course design — the track changes while you’re on it. But you make a good point, I’m an obstacle you have no chance of overcoming.”

“We’ll see about that,” he laughed, dimples creasing the scar on his right cheekbone.

They walked the bikes the rest of the way to the base of the mountain. Luckily the worst of the damage seemed to be a few bent spokes and several bruises that would no doubt surface the next day. Mara was still feeling shaky when they reached the car. Her muscles were disobedient noodles.

She glanced at Craig as they loaded the bikes onto the rack. She still wasn’t quite sure what to make of him. They met in a Greek history course they were both taking to fulfill general education requirements and had been dating for the past two months. He wasn’t really her type, a little too jockish for her taste. On the other hand, he was smart, ambitious, liked the outdoors, and had fantastic shoulders.

They got in the car and Craig pulled out on the highway. Mara’s phone beeped from her purse on the floor and she reached down to grab it. Craig glanced over, annoyed. “Let me guess, little Mr. Precious as always?”

“Shut the hell up! Just because I actually have friends of the opposite gender and don’t resort to fucking them doesn’t mean you have the right to judge me.”

“Come on... whatever.” He looked back to road, pouting.

“Get a life.” It was going to be a long ride back to Boulder.

Mara pulled up the text message on her phone. It was from James after all. All it said was, “3 p.m. tomorrow, The Laughing Goat.”

"Double cap extra dry?" James' hair was long, straight, and black. It came down almost to his shoulders, but outside of that he looked more or less like he had since high school. He had on a long-sleeve T-shirt with " $e=mc^2$ " emblazoned on the front, jeans, and brown leather flip-flops. Mara was always amazed at his tenacity for wearing sandals through Colorado winters. He pushed the cup and saucer across the table to her. Like all Laughing Goat espressos, the foam was drizzled on in abstract swirls reminiscent of Japanese stone gardens.

"You know me too well. Thanks for the drink." She took a sip, savoring the airy richness of the steamed milk and the sharp earthy bite of the espresso.

"Oolong for me." James' mother had fled from western Taiwan in the 80s and he had inherited her love for tea. He had an entire cupboard filled with exotic varieties and drank it like water. "How's the semester going?"

"Meh, lots of work ahead. I'm in Swarson's governance class, which would need its own library to house the reading list. The rest of my courses are fine but the real pain in the ass is doing LSAT prep at the same time. It's incredible how illogical logic can be." She wasn't a fan of the how the LSAT classes were starting to eat into

her free evenings. “How’s life on the other side of campus? Is your massive brain tearing apart whatever syllabi the computer science professors have tried to throw at it?”

James smiled thinly. “Hardly.” He glanced down at his tea and pursed his lips. Mara could see he was thinking hard about something. He looked up again. “Do you really want to be a lawyer?”

“Yeah, I mean, obviously my parents are lawyers. There are a number of family friends who are partners at law firms who would give me an internship. I’ve done well in all the recommended prerequisites. Plus, it seems pretty cool to argue with people for a living.”

“But do you want to be a lawyer, like, day-to-day?”

“Yes, well, yeah I think so. It just seems natural, you know?”

“Oh yeah, I’m sure you’d excel at law school and everything. It just seems like it’s so, well, detail-oriented. You’re so outgoing and active. Mike is a lawyer now, and don’t get me wrong, he loves it.” His older brother was halfway through Hastings Law School in San Francisco. “But I just have sort of a hard time picturing you enjoying pulling all-nighters reading through thousands of pages of contracts and stuff.”

“Well, you’re nerdy and introverted so programming seems perfect for you.” Mara was put off by his attitude. He was acting sort of strange. “Sorry, I guess I haven’t really devoted that much thought to it. James, what’s up? Why the mystery text? You know Craig got all pissy again because you’re my best friend.”

James grimaced with obvious distaste. “I really don’t like that guy. He thinks that just because you two are dating, you can’t hang out with any other guys. He’s such a frat boy, seriously, what do you see in him?”

“Dude, get off my back already! I don’t need two men jealous of each other over nothing. You don’t get to decide who I get to date any more than he gets to decide who I’m friends with. I’ll have you know he’s extremely well endowed.”

He held up his hands in mock surrender. “Alright, alright, T.M.I.! I just don’t like the guy...”

“James, I know you like beating around the bush, but why are you interrogating me about my legal ambitions and romantic prerogatives? What’s the deal, man? Are we just here to sip coffee or do you actually have something that you want to talk about?”

James took a sip of tea, put the cup down and looked directly into Mara’s eyes.

“I’m dropping out,” he said.

This made no sense at all. Mara had known James since he had fallen out of a canoe and she had pulled him back out of the water at a camp near the Russian River in Northern California. He had proceeded to explain that he was trying to figure how the water skeeters did their skeeting and was so focused that he didn't even notice the branch that knocked him out of the boat. They talked for the rest of the way down the river and it was the first time in Mara's eleven years that she had met someone she thought might actually be smarter than her. Ever since then they had been inseparable. She remembered the shocking brightness of blood on tablecloth. But that was another story.

James went on to blitz every mathematics competition he could find and his parents sent him to nerd camps at MIT and UC Berkeley during high school summers. He loved chess but his real passion was *go*, the ancient Chinese strategy board game. Mara had never understood. She didn't like either game. Why play with toys when the real world was so much more interesting?

Though James still had to master the social side of life, he was a genius, or at least the closest to a genius that Mara had ever met. There was simply no way he was flunking out of college.

Mara drained the last of her cappuccino and tried to regain her composure. "What are you talking about, James? I thought you

were blowing all of your C.S. coursework out of the water. Last February one of your professors invited you to be a research assistant in his lab. You can't be dropping out of school."

James took a deep breath. "What do you know about pattern recognition?"

After an hour of discussion, the espresso had worked its way through Mara's system and she had to take a bathroom break. Thoughts were spinning through her head. She took a deep breath and tried to clear her mind as she entered the restroom.

James had been working on a new project for over a year now. Apparently it had started when he was hired as a course reader for one of the upper division math courses. The professor asked him to grade the final assignments for all seventy students in the class. The projects had been submitted online. James started to read them but soon discovered that each one took at least an hour to thoroughly review. Mara couldn't see James spending two weeks going through assignments and apparently James hadn't been able to see himself doing it either. Instead, he combined a series of algorithms into a computer program that could automatically flag problems in the student assignments, resulting in much less to review.

The approach ended up working so well that he started adding new functionality. He called the program "Mosaic" after the first popular web browser developed by Marc Andreessen in the early 90s. By the end of the grading process, Mosaic could not only identify incorrect final answers, but also where the logic in students' proofs had gone awry. At this point, James' description started going over Mara's head.

He had shared the program with a few other course readers to test it out and the results were strong. Mosaic was able to ferret out mistakes extremely accurately. Then James had added some

“machine learning” layers to Mosaic. Apparently that meant that the program could adapt and evolve on its own based on the problems it faced. Mara had thought that that was the realm of Hollywood robots, but James assured her it was standard practice in computer programming. Mosaic then started to identify not only incorrect answers in the student assignments but also to flag other irregularities. James thought there was a bug in the code and it had stymied him for two weeks before he double checked a few assignments and realized they were plagiarized. Mara grinned. How like James to train a computer to catch cheaters.

As Mara was washing her hands her phone chirped. It was a text from Craig asking if she wanted to go trail running. It was enticing. She hadn’t worked out today and her mind was racing. But she needed to find out what was really going on with James so she texted back that tomorrow might be better. As she slid her phone into her pocket her elbow throbbed, a painful reminder of yesterday’s bike crash.

She walked back out into the flurry of sounds and smells of the coffee shop and sat back down at the table. “Okay, so what gives? Your program can catch math geeks copying each other’s homework?”

James smiled. “I call it ‘quantitative pattern recognition.’ Mosaic can take a dataset and deduce how logic sort of flows through it. It can tell when there’s something that doesn’t fit. I set it up to play chess against the freeware game on my computer and after it had played about ten games it started to win every time. Then I set it up to play *go* against me. I won ninety-five times in a row but then it started to beat me.” James flushed.

“Okay... who cares? I mean, can’t you play any game against a computer?” Mara was more impressed that he had won almost a hundred times in a row.

“No, no, you don’t understand. *Go* is infamous because, unlike chess, computers can’t beat even moderately good human players.

There are just too many different strategic approaches to the game. The analytical artificial intelligence of the computer can't match the flexibility and pattern recognition of the human brain. It's crazy that Mosaic is beating me, I haven't lost to a computer in years."

"Fine, so Mosaic can beat you in *go*. But where is this conversation going? Why are you dropping out of school?" she asked.

James squared his jaw. "I'm going to start a company. And I need your help to do it."

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Finally, thank you for reading. I hope you’ll come back for more!

Cheers, Eliot

ABOUT THE AUTHOR

Eliot lives in Oakland, CA with his fiancée. When he's not writing, he's working with entrepreneurs and investors to build ridiculously awesome new technology businesses. You can usually find him climbing a rock, reading a book, surfing a wave, travelling the world, or getting lost in the woods. His blog (www.eliotpeper.com) and speaking engagements explore entrepreneurship, storytelling, and adventure.