King Abdullah University of
Science and Technology

CS356 Hardware Accelerator Architectures
Time Management and People Skills

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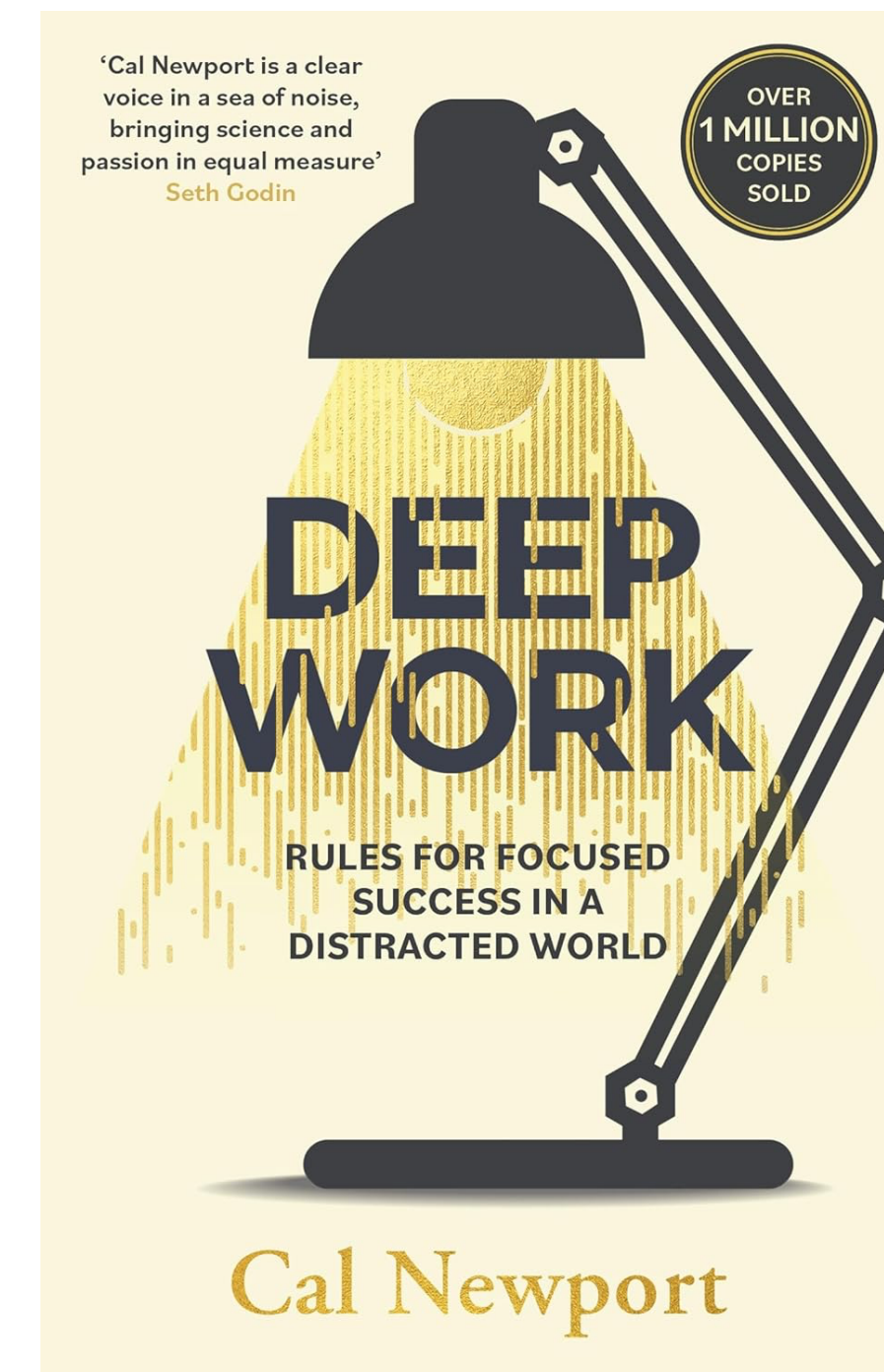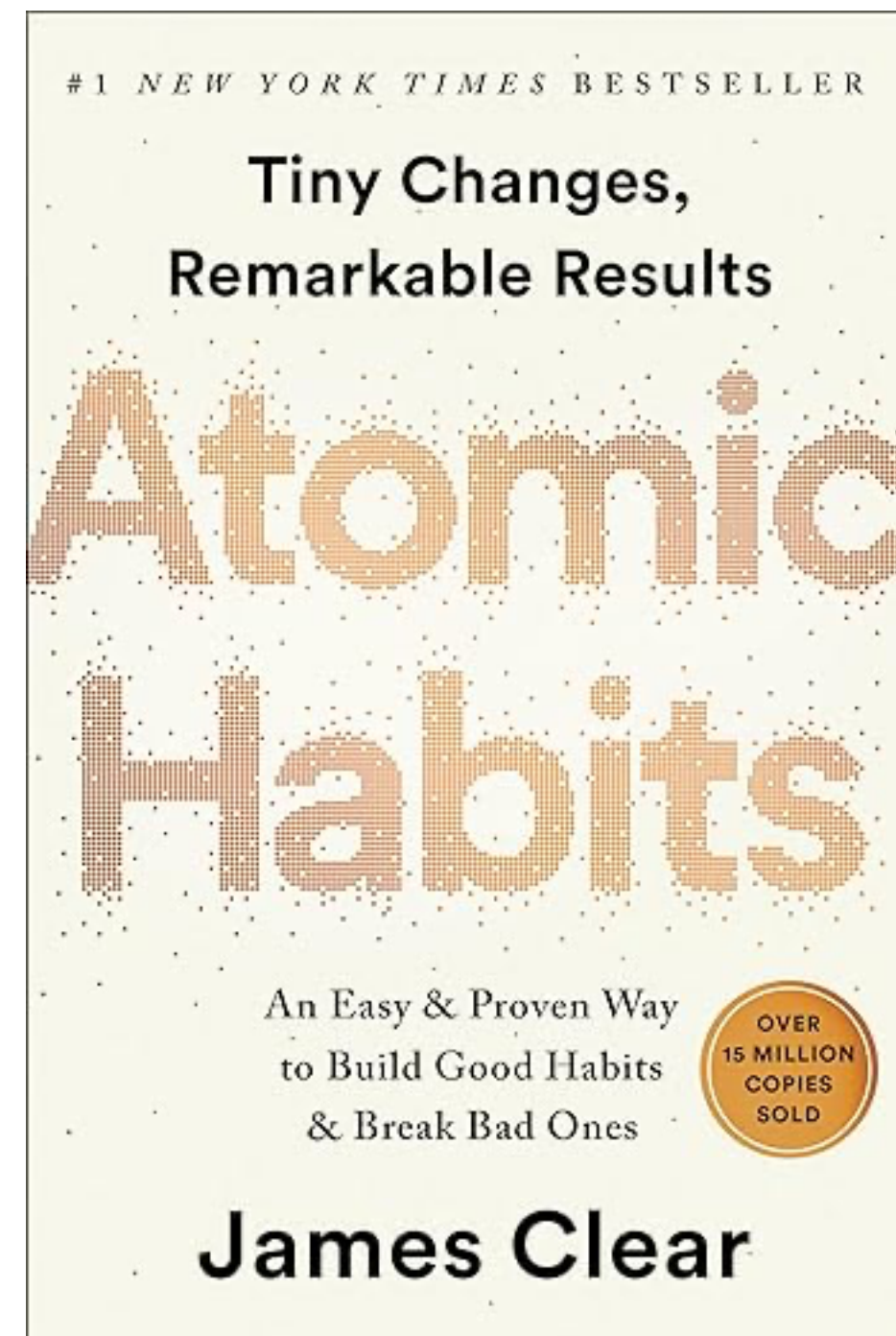Slides based on "Time Management" by Nick Feamster and Alex Gray

Background

▶ Research requires **hard work**, lots of time

    ▶ This lecture: How to work smarter (and harder)

    ▶ Goal setting

    ▶ Prioritization

    ▶ Uptime, Downtime

    ▶ Making Time

    ▶ Making good use of little time blocks

    ▶ Anti-Procrastination Tips

Some Resources

Study Hacks Block, <u>calnewport.com</u>

Time Management

▸ The most essential tactic for achieving goals

▸ Time is perhaps your most precious resource

   ▸ Everyone and everything is fighting for it: Classes, advisor, career aspirations, family, goldfish, etc.

▸ **Step 1: Goal setting**

   ▸ Where do you want to be 5 years from now?

▸ **Step 2: Priorities**

   ▸ What is the best use of your time right now for achieving that goal/those goals?

Questions to ask now

▶ What do I want to do with my Ph.D.?

  ▶ Faculty position

  ▶ Research lab

  ▶ Industry

  ▶ …

▶ Your answer should drive many decisions driving forward

  ▶ Attend premier conference vs. …

Goals Take Time to Achieve

▶ Good work takes lots of time, lots of hard work

▶ Often at the expense of many other things

▶ Need to leave **extra time**

  ▶ Failures and dead ends

  ▶ "Backgrounding"

  ▶ Deep thinking – requires quality time

Your "A" List

▶ List of sub-goals that are essential to achieving your top-priority goals

▶ Break your larger goal into sub-goals that are measureable and achievable

    ▶ Sense of progress

    ▶ Accountability

▶ Helps to write these down

    ▶ Otherwise, they can easily be trumped by other things that need to be done

▶ Also helps to write down your progress

Outline

▶ Uptime and Downtime

▶ Using time to work towards deadlines

▶ Time hacks

▶ Assignment: Time log

Uptime

- Know your most efficient times to work

    - Micro: Time of day

    - Macro: Day of week

- This may take some time to discover

    - "Focused practice" can help here: What did I really get done in that time?

Protecting Uptime

▸ Write them down on your calendar as appointments

▸ Eliminate distractions

  ▸ No errands

  ▸ No television

  ▸ No meetings, talks

  ▸ Close email, silence phone

  ▸ Leave shared office

▸ Use uptime where possible

  ▸ Carry reading with you always

  ▸ Laptop

More on Uptime: Moods

- Research involves different kinds of work

  - Coding

  - Reading

  - Writing

  - Drawing figures

  - Thinking

- Know when you are best at each of these

- Try to keep a corresponding schedule

Downtime

- For your "A" activities: Leverage downtime as "background processing"

  - Exercise

  - Boring talks, lectures, meetings, social events

  - Sleep (think about problem as you fall asleep)

- For other activities: Use Batching

  - Never use several small blocks of time to do what can be done in a single small block of time

  - Small tasks (e.g., replying to email, letters, etc.) can be batched

  - Stack papers, etc.

Time and Deadlines

Avoiding "Bad" Procrastination

▶ The hardest part is getting started

▶ Using small time blocks to get started on something will make it easier to continue later

  ▶ Use 5 minutes to start a small piece of your "A"

▶ Use **deadlines**, even if you need to create them artificially

  ▶ Schedule meeting with advisor

  ▶ Conference deadline

Working Towards Deadlines

- Backward planning

- Forward planning

- Prototyping: Churning and refinement

    - "Timeboxing"

- Plan for downtime

    - Look for the weak link

    - Baggage and shortcuts

- Cheap/Fast/Good

Backwards Planning

▶ Figure out when the deadline is

▶ Work backwards from that time to figure out when you want to have certain pieces finished by

▶ Helps to prevent the project from **going unbounded**

▶ Figure out dependencies!

Forward Planning

▶ After you have broken down your task into smaller, more manageable tasks

▶ Set out a list of tasks

▶ Time sequence of timelines for each task

▶ Good for achieving clarity about what must be accomplished

Prototyping/Timeboxing

▶ Set aside a block of time for which you will work on some aspect of a project (OK if the time is small)

  ▶ Use a timer!

▶ Best to do something (in the spirit of "Mythical Man Month")

▶ Take baby steps

  ▶ Get the system running before you think about details of how to optimize it

Planning for Downtime

▶ Look for the aspect of your project that could cause the wheels to fall off…**Do them first!**

    ▶ Need for access to certain data

    ▶ Experiments that could possibly be wrong the first time

▶ Identify "excess baggage" and optional features that could be cut if time runs short

Time Hacks

Creating Time: Inversion

- Do things when other people don't

  - Shopping at 10 p.m. on Monday night

  - Lunch at 11:45 a.m. or 1:30 p.m.

  - Flights on weekday evenings

- Multi-task with your required activities

  - E.g. watch videos while exercising, listen to podcasts while travelling

Research Interrupts

- Each interrupt requires 5 minutes to re-sync

  - 2-3 interrupts can kill an hour

- Schedule large blocks of time

- Minimize interruptions

  - Silence phone and notifications

  - Use tools to disable access to time-wasting sites/apps

Subconscious Interrupts

▸ Things you know you have to do but haven't written down

   ▸ **Keep a to-do list!**

   ▸ (To-do list should not be your email inbox)

▸ Stray papers, kitsch, etc. in your workspace

   ▸ **Clean workspace** keeps you free to think about other things and will prevent you from moving papers

Invest Time to Save Time

- Expert: Someone who knows more than others in some area

- Nightingale's Theorem: "If you spend an extra hour per day in your chosen field, you will be come an expert within 5 years."

  - Adequate vs. excellent

- Automate or eliminate repetitive tasks

- "Measure twice, cut once"

  - If you are not detail-oriented, find someone who is!

More Investing Time

▸ Don't wait until something is broken to fix/improve it

  ▸ Code

  ▸ Loose handles, dirty countertops, etc.

▸ Always, always have a way to record ideas

  ▸ Ideas strike at unexpected times and places

  ▸ Also, mundane details save time

Achieving Balance

▶ Important for research

    ▶ Your brain needs a break, too

    ▶ Allows for backgrounding (if you so choose)

▶ Take the time to think about why you are doing what you are doing (big picture)

    ▶ Are your losing sight of your "A" goals/priorities?

    ▶ Same thing for research: Take time to think about big picture (this can be done anywhere).

Time Log

Time Log: Why?

▶ Unplanned work, interruptions, etc. can have disastrous effects on productivity

▶ **"Where does the time go?"**

Time Log: How?

▶ Break the day into 10-minute intervals, keep a record of what you do in each

▶ Take this seriously. You will be surprised.

▶ Use any method you like: text file/spreadsheet with times, app

  ▶ Toggl is a good time tracking app/website

  ▶ You're more likely to do it!

  ▶ **Keep track of changes/transitions**

Time Log: Analysis

▶ What did you actually do vs. what did you intend to do?

▶ Do you have bad habits?

▶ What interruptions should be eliminated?

▶ When are you most productive?

People Skills for Geeks

Path to a professional

▶ Research success (tech skills, expertise, track record) in graduate studies isn't everything

▶ Soft Skills acquired in the process matter **during and after** grad school

▶ You are a professional in the making

▶ Start acting like one!

Soft Skills

▶ Social, communication, interpersonal, and self-management skills that allow people to collaborate successfully and amicably with others in a professional setting

▶ Virtually wanted for any job: support teamwork and positive env

▶ In your lab you already are in a professional environment

Why soft skills are important?

▶ Effective communication: better express thoughts and understand others

▶ Collaboration and teamwork: working towards shared objectives requires healthy and productive atmosphere

▶ Emotional intelligence, empathy, self-regulation: better understand and control one's own emotions

▶ Adaptability: navigate situations changing quickly, rapid learning

How to drive success

▶ Ownership: take ownership of tasks & projects, be pro-active, seek out

▶ Professionalism: behavior, respect, etiquette, respect

▶ Meetings: punctuality, objectives, action items

▶ Learn culture: how is it done here?

How to learn and improve

▶ Self-Evaluation: Consider your soft skill strengths and opportunities for development. Think about other people's input and decide which particular abilities you wish to work on developing.

▶ Establish Specific Objectives: Establish measurable objectives to enhance your soft skills. To make the development process more practical, divide more ambitious objectives into smaller, easier-to-accomplish activities.

▶ Stay open to Feedback: Consult with friends, mentors, or coworkers for their opinions. Sincere criticism might give you important information about how proficient you are in soft skills and where you need to grow.

How to learn and improve

▶ Mentoring: Seek mentorship from someone who can offer direction on developing soft skills. A mentor can share their experiences, give insightful counsel, and offer constructive feedback on how you can enhance your soft skills.

▶ Attend classes and training: Participate in online classes, training courses, or seminars that emphasize developing soft skills. Numerous platforms provide classes on leadership, time management, communication, and other crucial abilities.

▶ Develop your emotional intelligence: Acquire emotional intelligence by understanding and appreciating both your own and other people's feelings. Develop a positive and flexible mentality, exercise empathy, and learn effective stress management techniques.

Inspired by https://www.geeksforgeeks.org/introduction-to-soft-skills/