Checklist for a well-rounded, balanced PhD experience (Stat+ML)

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Some personal suggestions (via accumulated wisdom) for my own students. Not intended as broad advice.

**Professional skills checklist.** Do not equate professional success with publishing papers. How do you rate yourself on the following complementary angles?

- **Independence:** Can you carve out your own compelling research agenda, independent of your mentor/advisor? (this is about asking the right questions, at the intersection of “interesting to you” and “useful to the world”)
- **Calibration:** Can you gauge if a problem or research direction is likely too easy or too hard/ambitious? (this is useful to accurately estimate potential timelines and breaking harder problems into baby steps)
- **Mastery:** Do you have the technical/mathematical sophistication to tackle progressively harder problems? (this is both a function of depth in your area, and breadth by borrowing tools/ideas from different areas)
- **Experiments:** Do you have (hopefully multiple) programming languages at your fingertips that enable you to run large-scale simulations or experiments efficiently? (this is about closing the theory-practice gap and trying out your ideas quickly to iterate between brainstorming, proving and testing)
- **Creativity:** Can you come up with novel ideas, which are not directly convex combinations of other people’s ideas? (this may happen rarely, but usually happens after a deeper understanding of the problem subtleties)
- **Writing:** This has many angles: correct, fluent English (grammar+spelling); explaining complex ideas; gauging your target reader and writing at their level; mastering different lengths: half pg abstracts, 1-4 pg research summaries, 15-30 pg conference papers, 25-45 pg journal papers, 15-20 pg proposals, etc.
- **Speaking:** This has many angles: correct, fluent English (grammar+pronunciation); (black/white) board talks; verbally explaining your work to colleagues; 1-2 minute elevator pitch; 5 min spotlight talk with slides, 15-30 min conference talk with slides, 50 min seminar talk with slides, 1hr 20 min class room lecture, etc.

Each of these takes years to develop: they need thought, planning, deliberate practice, constructive feedback.

**Personal checklist.** It’s remarkably easy to lead a lopsided and imbalanced life inside the PhD bubble.

- **Sleep.** Reasonably high average with somewhat low variance, somewhat synchronized with the sun.
- **Physical activity.** Averaging multiple times per week, attempting nonzero activity every single week.
- **Hygiene.** Clean surroundings, minimizing office sleepovers (for others’ sake also!), regular showers, etc.
- **Breaks.** Regular half/full-day breaks, avoiding all work and going to campus (break the bubble).
- **Personal life.** Spending sufficient time catching up with friends, family, partners, pets, etc.
- **Mental health.** Are you happy or somewhat satisfied with how your life and PhD are going? Many people have impostor’s syndrome, but is yours particularly nasty, occupying your mind too much?
- **Diet.** Diet affects energy levels, mood, immunity, etc. Do you have a healthy, balanced diet?
- **Finances.** Are you saving a little bit for a rainy day, or for the occasional treat or travel?

**Ask for advice.** If you want help in improving one or more of the above aspects, ask for advice from friends, family, colleagues or mentor(s). All of these skills can be improved over time by identifying weak points and seeking constructive feedback. Obviously, in the end, figure out what works best for you; there is no single correct answer for everyone, but be open to what has worked for others (especially if your current plan doesn’t work). Having a balanced life does not mean it is low-intensity or low-work or low-energy: indeed, highly motivated, high-intensity and high-energy lives can also be relaxed, balanced and fulfilling.