科技寫作(Scientific Writing)

Week 2 (Sept. 15 – Sept. 19)

E-mail寫法
推薦信(Recommend Letter)

E-mail寫法

基本原則

同理收信者。將心比心。(請不要預設收件者人很nice)

你想收到什麼樣的e-mail?

第一句第二句清楚表達目的。Title明確，內文符合標題。寄件人是誰。

你不想收到什麼樣的e-mail?

太長。沒禮貌。排版不好。不知道在表達什麼。對方名字打錯。

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而言文，情信而辭巧，迺含章之玉牒，秉文之金科也。

…

…

文成規矩，思合符契。或(1)**簡言以達旨**，
或(2)博文以該情，
或(3)明理以立體，
或(4)隱義而藏用。

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而[illegible]文之金科也。

…

…

文成規矩，思合符契。或(1)**簡言以達旨**，
或(2)博文以該情，
或(3)明理以立體，
或(4)隱義而藏用。

1. 越高位管理者越沒時間，通常越暴躁
2. 越高位管理者越有選擇權忽視你
3. 沒人記得你，也沒人想花工夫記得你

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而[illegible]飾文之金科也。

…

…

文成規矩，思合符契。或(1)**簡言以達旨**，
或(2)博文以該情，
或(3)明理以立體，
或(4)隱義而藏用。

一天花兩小時回覆數十封e-mails

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而[illegible]文之金科也。
…
…
文成規矩，思合符契。或(1)**簡言以達旨**，
或(2)博文以該情，
或(3)明理以立體，
或(4)隱義而藏用。

You got 1 minute before pissing off the receiver.

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而[illegible]文之金科也。

…

…

文成規矩，思合符契。或(1)**簡言以達旨**，
或(2)博文以該情，
或(3)明理以立體，
或(4)隱義而藏用。

Be professional. Your main point should NOT be your excuse .

基本原則

同理收信者。將心比心。If you only have 1-minute to spend:

你想收到什麼樣的e-mail?

你不想收到什麼樣的e-mail?

基本原則

同理收信者。將心比心。If you only have 1-minute to spend:

我不想收到什麼樣的e-mail?

1. (i)寄件者身分不明 (ii) mail-list身分不明
2. No title or stupid (not specific or meaningless) title
3. 主旨不明(邏輯、文法、拼字錯脫誤)
4. 意圖不明(要我自己猜我應該幹嘛，或timeline不明)
5. 過分失禮(是關係或情境而定)

我不想處理什麼樣的e-mail?

1. 情緒勒索
2. 不尊重我的正常上班時間
3. 腦筋急轉彎
4. 回覆不立即，愛回不回 (忙人過了兩天就不記得你的狀態，要進入能回覆你的狀況很費神)
5. mail-list沒用腦袋 (自己轉發很麻煩)
6. 沒有透露為了解決你的問題所需的足夠資訊。
   明明可以自己一次講清楚的事情，要讓我回覆e-mail自己問清楚

基本原則 (人、事、時、地)

Dear Dr. X,

I would like to pursue a Ph.D. degree.

The application deadlines are mostly in mid-November.

Embedded is my short Bio.

I hope I can hear your advice.

Would it be possible to schedule a meeting in your office soon?

Best wishes,

Hauyu

基本原則

Dear Dr. X,

Please provide the ABC data?

Thanks very much.

Best wishes,

Hauyu

基本原則

Dear Dr. X,

I am performing Y analysis for the purpose of Z.
Would you mind providing the ABC data?
Thanks very much.

Best wishes,
Hauyu

基本原則

Dear Dr. X,

I have performed the X analysis.
Attached is a preliminary result for your preview.
In short, I found Y.
I am not very certain about Z.
Would it be possible to schedule an online or f2f meeting this week?

Best wishes,
Hauyu

基本原則

[redacted]

12:20 AM (11 hours ago)

Translate to English

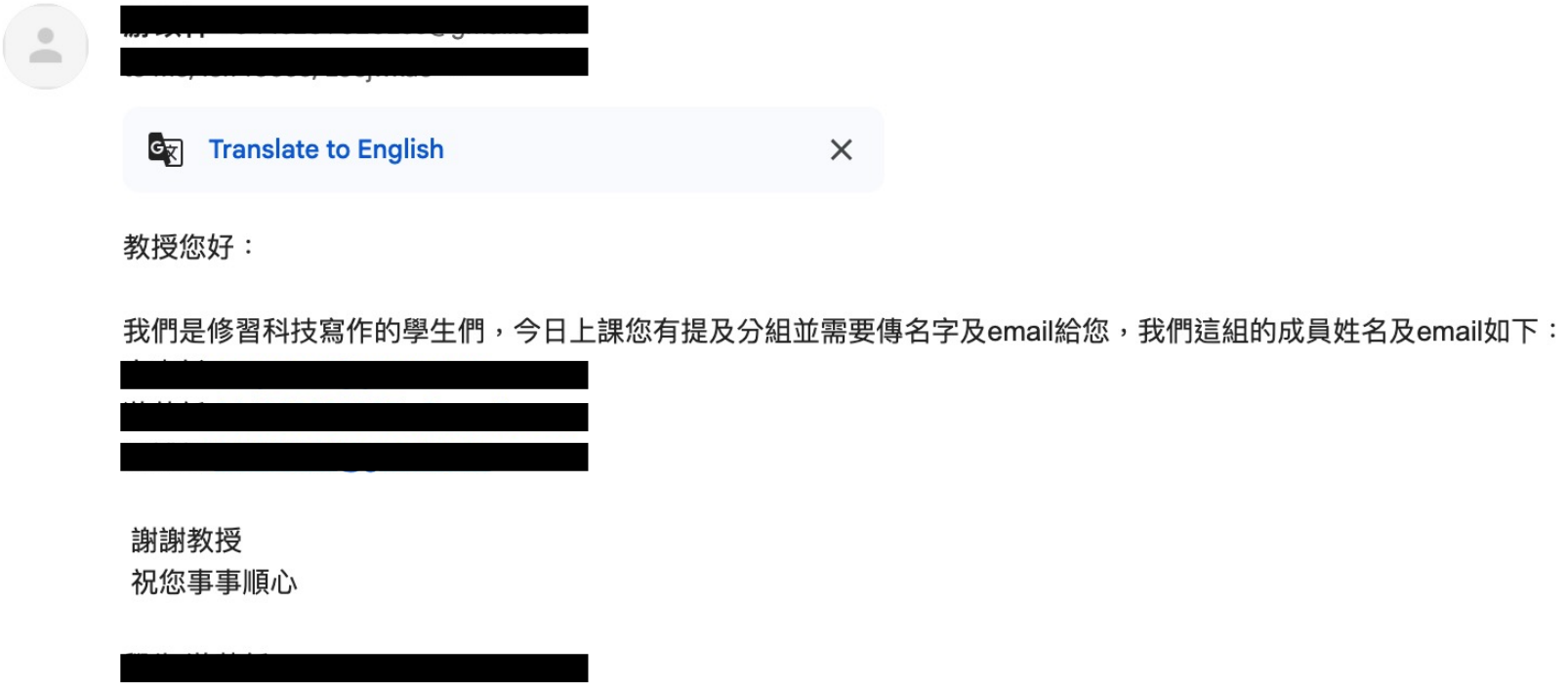
老師您好：

我們是修習科技寫作的學生們([redacted])
收到老師的Email，需提交下次上課討論的材料
以下副檔為我們這組要提交的範本，請老師查收！

祝好
學生[redacted]

One attachment • Scanned by Gmail

基本原則



[redacted]

Translate to English

教授您好：

我們是修習科技寫作的學生們，今日上課您有提及分組並需要傳名字及email給您，我們這組的成員姓名及email如下：

[redacted]

謝謝教授
祝您事事順心

[redacted]

基本原則 (no valid information in this e-mail!)

Dear Dr. X,

I am very sorry that my mother asked me to do XYZ this week.
After that, I took some rest. And then my dog had some problems and I needed to bring my dog to the hospital. I spent 3 days with my dog in the hospital. Then, I was in a bad mood……
Therefore, I have not made much progress this week.
I will hopefully catch up in the upcoming week.

Best wishes,

Hauyu

基本原則 (provide valid information)

Dear Dr. X,

I am still working on the analysis of X.
I expect to accomplish it next Monday/Tuesday/Wednesday/…

I will forward you a message by then.

I am sorry for the delay. Thanks very much for your patience.

Best wishes,

Hauyu

基本原則 (Friday evening)

Dear Dr. X,

I am applying X, which requires a recommendation letter from you.

It would be very much appreciated if you could upload it via the online interface before the application deadline, next Monday.

Thanks very much!

Best wishes,

Hauyu

基本原則 (no context)

Dear Dr. X,

I am running X analysis using the Y code.
It crashed. Could you let me know why?

Best wishes,
Hauyu

基本原則 (no effort, no preparation, no thinkings)

Dear Dr. X,

I am running X analysis using the Y code.
It crashed. Could you troubleshoot my codes?

Best wishes,
Hauyu

基本原則 (not specific, no detail, requires questions)

Dear Dr. X,

Last time you suggested me to try the analysis X.
It does not work.

Best wishes,
Hauyu

推薦信

(品牌，以及使用品牌的人)

Charmless man
https://www.youtube.com/watch?v=p1a_4CN4onA

基本原則

同理審核者。將心比心。

什麼情況下(e.g., 他跟你說什麼話時)，你會覺得一個人被過度包裝?

E-mail基本原則

南朝-劉勰<文心雕龍．徵聖>

泛論君子，則云「情欲信，辭欲巧。」此修身貴文之徵也。
然則志足而言文，情信而辭巧，迺含章之玉牒，秉文之金科也。

…

…

文成規矩，思合符契。或(1)簡言以達旨，
或(2)**博文以該情**，
或(3)明理以立體，
或(4)隱義而藏用。

基本原則

同理寫推薦信的人。將心比心。
什麼情況下，你會跟別人推薦一個人?

互相需求互補，尊重，禮貌。很優秀。可靠，值得信任。

基本原則

同理寫推薦信的人。將心比心。
你會如何推薦一個人?

基本原則

同理雇主。將心比心。
你想聘僱什麼樣的人? 潛力如何估計?

基本原則

同理寫推薦信的人。將心比心。
你如何成為一個可以被推薦的人?

基本原則
有所本

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ABSTRACT

Context. Mapping the spatial distributions and abundances of complex organic molecules in hot cores and hot corinos surrounding nascent stars is crucial for understanding the astrochemical pathways and the inheritance of prebiotic material by nascent planetary systems. However, the line-rich spectra from these sources pose significant challenges for robustly fitting molecular parameters due to severe line blending and unidentified lines.

Aims. We present an efficient framework, Bayesian Active Spectral-cube Inference and Learning (BASIL), for estimating molecular parameter maps – excitation temperature, column density, centroid velocity, and line width – for hundreds of molecules based on the local thermodynamic equilibrium (LTE) model, applied to wideband spectral datacubes of line-rich sources. The main aim is to allow the simultaneous fitting of hundreds of molecules to disentangle line blending issues and map the kinematic and abundance spatial distributions of the molecular parameter maps.

Methods. We adopted stochastic variational inference (SVI) to infer molecular parameters from spectra at individual positions, achieving a balance between fitting accuracy and computational speed. For obtaining parameter maps, instead of querying every location or pixel, we introduced an active learning framework based on Bayesian quadrature and its parallelization. Specifically, we assessed and selected the locations or pixels of spectrum that are most informative for estimating the entire set of parameter maps by training a Gaussian processes (GP) model. By greedily selecting locations with maximum information gain, we achieve sublinear convergence: the estimation error of the GP model for parameter maps drops rapidly in the early stages of iterations and then stabilizes. At this point, we can halt the fitting process, providing a fast and reasonably accurate visualization of the molecular parameter maps, while further accuracy is obtained through additional iterations of model training by querying more locations.

Results. We benchmarked our algorithm using a synthetic spectral cube of 40 000 (200×200) pixels, in which each pixel contains 138 016 frequency grids, and fit an LTE model with SVI to obtain four spectral parameters for a list of 117 molecules (117×4 dimensions). Our algorithm is able to estimate 468 molecule parameter maps for 40 000 pixels in ∼180 hours (18 iterations of 50 parallel fittings, ∼10 hours per batch), achieving a comparable root mean square error across all data points. The full analysis is done on a high-memory server with multi-core CPUs. In contrast, a traditional MCMC fitting would take approximately $\sim 2 \times 10^6$ hours to achieve the same level of accuracy, while requiring significant manual tuning. In particular, with two iterations of ∼20 hours computational time, the GP model predicts parameter maps that are visually accurate. Additional training iterations provide progressively more accurate results. This quick visualization meets the demands of big data in modern astronomical surveys.

基本原則-比較性

1. Integrity of background knowledge (as compared to …)
2. Capability (self-learning? Problem solving? [teaching?])
3. Attitude (hard working, self-motivated, lazy??)
4. Discipline (紀律)
5. Communication skill (English speaking/writing) and teamwork
6. Creativity
7. Emotional stability (are you a trouble?)