Teknik Presentasi

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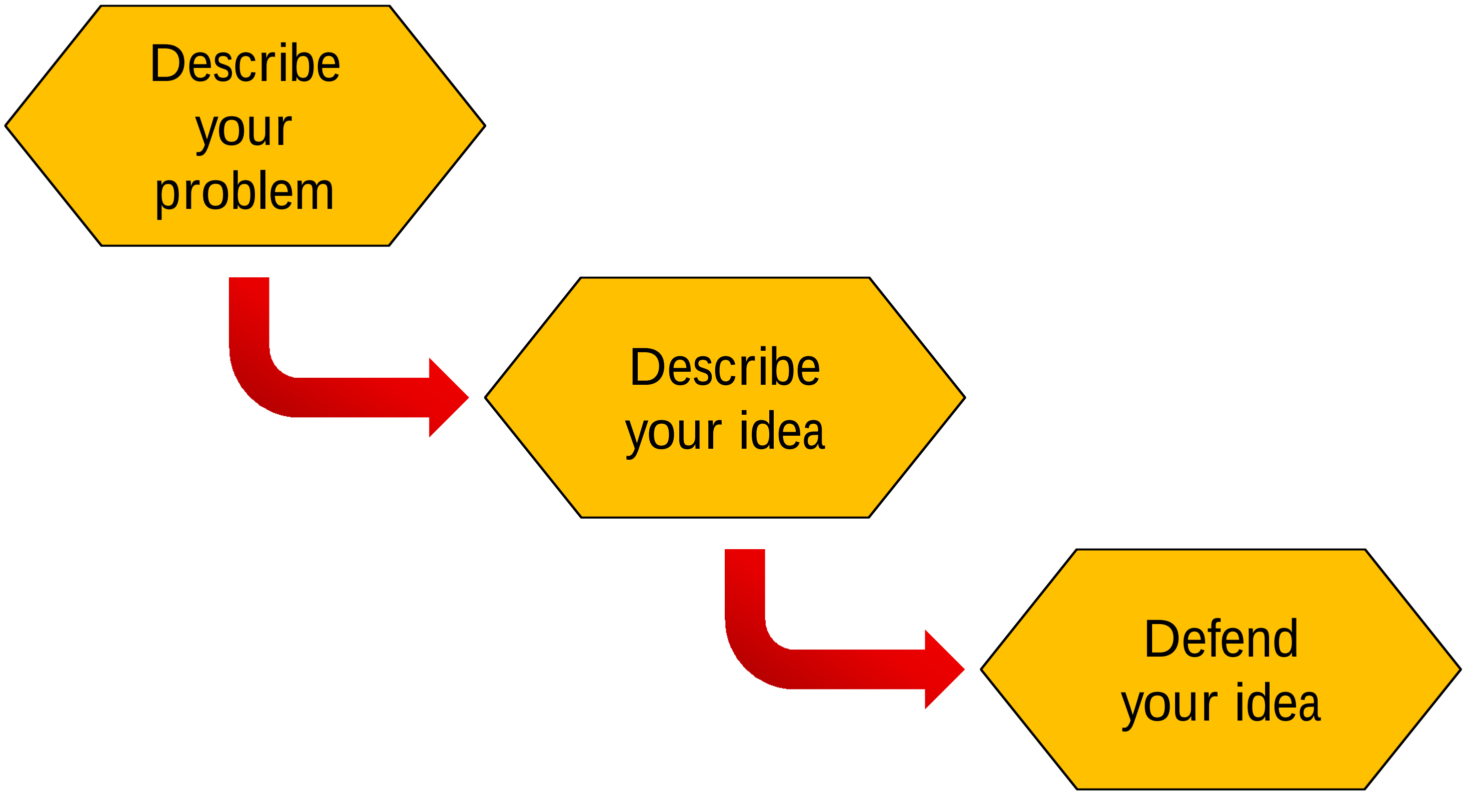
Tata Tulis Karya Ilmiah
Minggu ke-8

Politeknik Elektronika Negeri Surabaya
2011

Pentingnya presentasi?

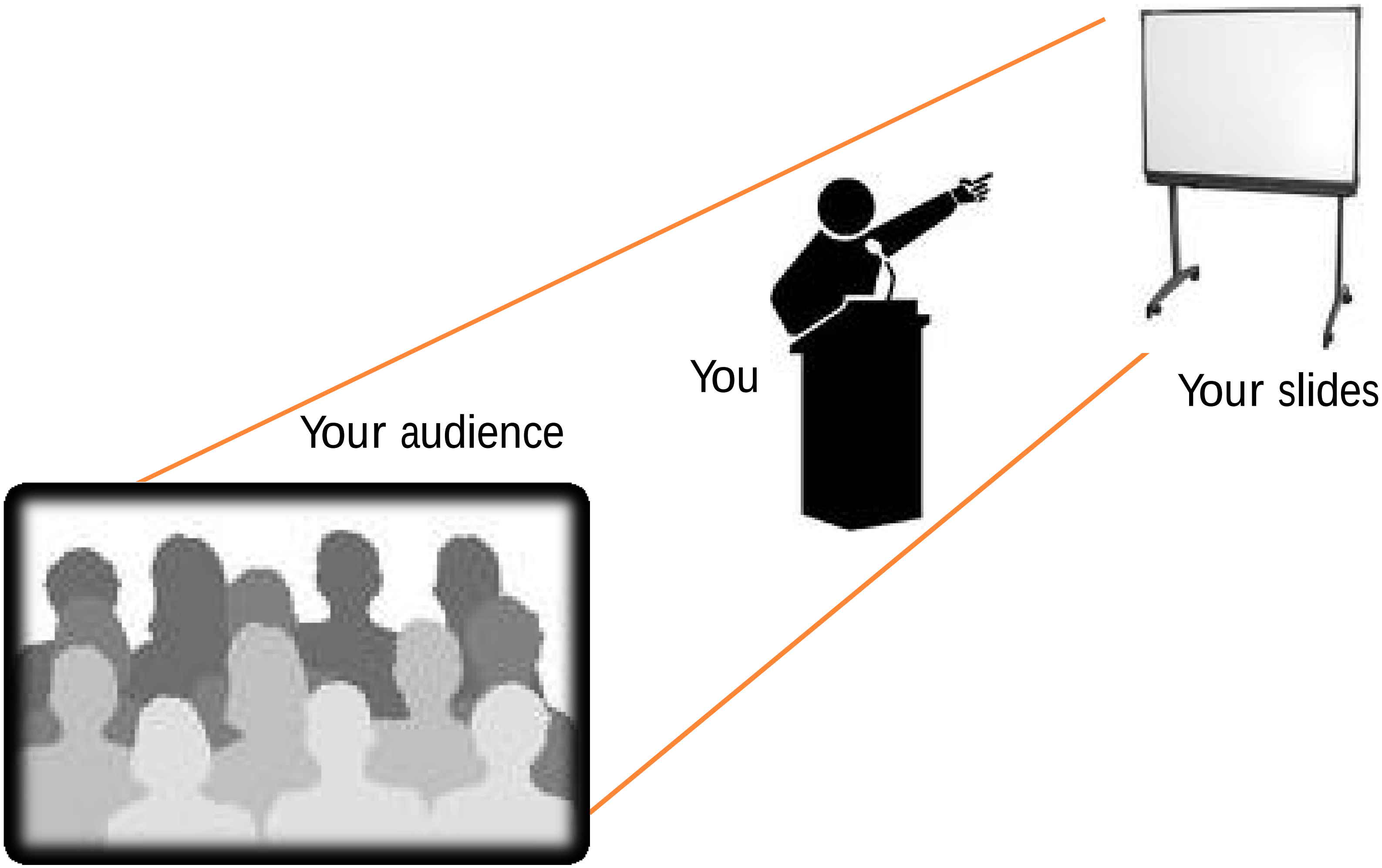
- Sarana penyampaian ide dengan lebih komunikatif
- Dapat mengikuti dan memastikan pemahaman dari pendengar
- Memberikan tingkat kepercayaan kepada pendengar tidak hanya melalui bahasa visual tetapi juga bahasa verbal

Alur presentasi



Isi presentasi

Latar belakang	1 hal
Perumusan masalah	1 hal
Related works	1 hal
Ide dasar solusi pendekatan (originality/uniqueness)	1 hal
Dasar teori	1-2 hal
Pembahasan detil pendekatan	~ hal (disesuaikan durasi)
Hasil eksperimen dan analisa	1 hal
Kontribusi	1 hal
Referensi	1 hal

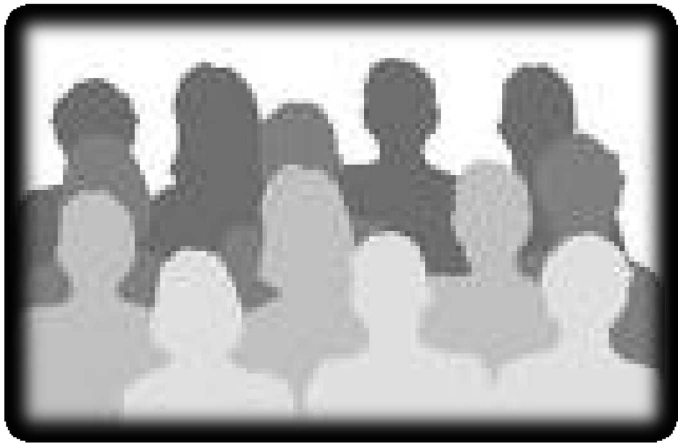

Your audience
You
Your slides

Your slides

- Berikan ilustrasi menarik dalam slide (Jangan terlalu banyak kalimat dalam slide)
- Jangan membahas terlalu detil tanpa disertai ide/maksud/motivasi dasarnya.
- Pointer sangat membantu untuk memfokuskan bagian yang kita maksudkan dalam presentasi
- Klaim originality/uniqueness anda - slide
- Pertegas kontribusi

- Atur waktu dengan baik
- Gaya penyampaian harus convincing
- Jangan terlalu banyak melihat konten presentasi
- Terimalah kekurangan dan ubahlah sebagai kelebihan

Your audience



- Tujuan anda adalah pendengar. Jangan membelakangi pendengar.
- Perhatikan ekspresi pendengar
- Dengarkan dengan seksama pertanyaan dari pendengar dan jawablah *to-the-point*
- Hindari debat kusir

Bahasa verbal yang harus dihindari dalam presentasi

- Berbicara terlalu pelan dan bernada datar, ataupun sebaliknya terlalu cepat dan bernada tinggi
- Membosankan
- Tidak fokus pada topik
- Hal-hal yang membuat pendengar tidak tertarik

Contoh-contoh

K-means Algorithm

Let $A=\{a_i \mid i=1,\ldots,f\}$ be attributes of f-dimensional vectors and $X=\{x_i \mid i=1,\ldots,N\}$ be each data of A. The K-means clustering separates X into k partitions called clusters $S=\{s_i \mid i=1,\ldots,k\}$ where $M \in X$ is $M_i=\{m_{ij} \mid j=1,\ldots, n(s_i)\}$ as members of s_i, where $n(s_i)$ is number of members for s_i. Each cluster has cluster center of $C=\{c_i \mid i=1,\ldots,k\}$. K-means clustering algorithm can be described as follows:

1. Initiate its algorithm by generating random starting points of initial centroids C.
2. Calculate the distance d between X to cluster center C. Euclidean distance is commonly used to express the distance.
3. Separate x_i for i=1..N into S in which it has minimum $d(x_i,C)$.
4. Determine the new cluster centers c_i for i=1..k defined as:

$$c_i = \frac{1}{n_i}\sum_{j=1}^{n(s_i)} m_{ij} \in s_i$$

5. Go back to step 2 until all centroids are convergent.

Ali Ridho Barakbah, Yasushi Kiyoki, "A Pillar Algorithm for K-Means Optimization by Distance Maximization for Initial Centroid Designation", IEEE Symposium on Computational Intelligence and Data Mining (CIDM) 2009, March 30-April 2, 2009, Nashville-Tennessee, USA.

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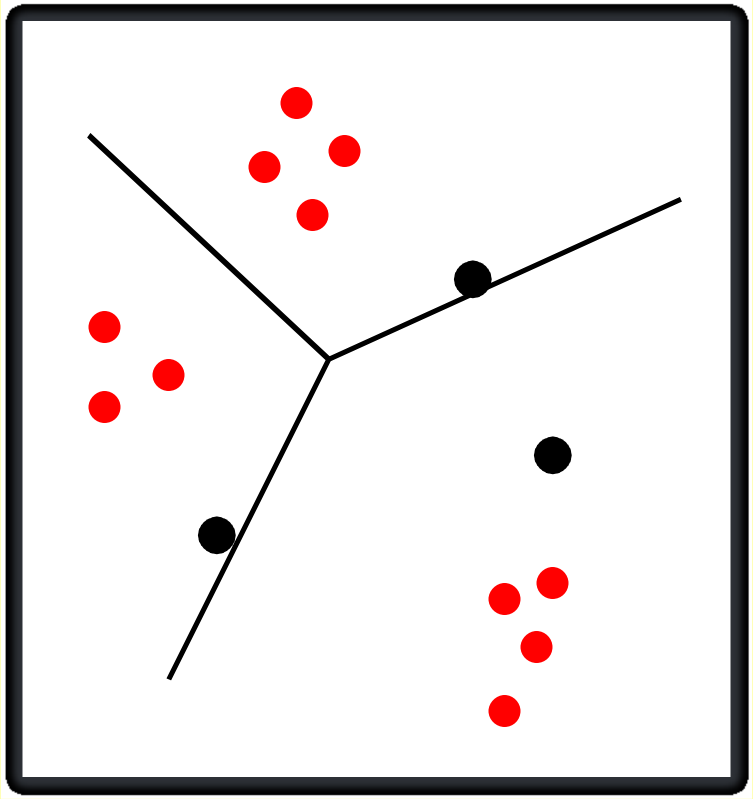

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The Algorithm of Pillar

Let $X=\{x_i \mid i=1,\dots,n\}$ be data, k be number of clusters, $C=\{c_i \mid i=1,\dots,k\}$ be initial centroids, $SX \subseteq X$ be identification for X which are already selected in the sequence of process, $DM=\{x_i \mid i=1,\dots,n\}$ be accumulated distance metric, $D=\{x_i \mid i=1,\dots,n\}$ be distance metric for each iteration, and m be the grand mean of X. The following execution steps of the proposed algorithm are described as:

1. Set $C=\emptyset$, $SX=\emptyset$, and $DM=[]$
2. Calculate $D \leftarrow dis(X,m)$
3. Set number of neighbors $nmin = \alpha \cdot n / k$
4. Assign $dmax \leftarrow argmax(D)$
5. Set neighborhood boundary $nbdis = \beta \cdot dmax$
6. Set i=1 as counter to determine the i-th initial centroid
7. $DM = DM + D$
8. Select ж $\leftarrow x_{argmax(DM)}$ as the candidate for i-th initial centroids
9. SX=SX $\cup$ ж
10. Set D as the distance metric between X to ж.
11. Set $no \leftarrow$ number of data points fulfilling $D \leq nbdis$
12. Assign DM(ж)=0
13. If $no < nmin$, go to step 8
14. Assign $D(SX)=0$
15. $C = C \cup$ ж
16. $i = i + 1$
17. If $i \leq k$, go back to step 7
18. Finish in which C is the solution as optimized initial centroids

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Initial settings

1. Set $C=\emptyset$, $SX=\emptyset$, and $DM=[\,]$
2. Calculate $D \leftarrow \text{dis}(X,m)$
3. Set number of neighbors $nmin = \alpha \,.\, n \,/\, k$
4. Assign $dmax \leftarrow argmax(D)$
5. Set neighborhood boundary $nbdis = \beta \,.\, dmax$
6. Set i=1 as counter to determine the i-th initial centroid

Accumulating D to DM

Selecting initial centroid candidate

7. D
8. Select ж $\leftarrow x_{argmax(DM)}$ as the candidate for i-th initial centroids
9. SX=SX $\cup$ ж

10. Set D as the distance metric

Outlier detection

11. Set $no \leftarrow$ number of data points fulfilling $D \leq nbdis$
12. Assign DM(ж)=0
13. If

Promoting the candidate to be an initial centroid

14. As
15. C

Iterative process until all initial centroids fulfilled

16. i =
17. If $i \leq k$, go back to step 7
18. Finish in which C is the solution as optimized initial centroids

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Related Works for Emotion based CBIR

- Park and Lee introduced an emotion-based image retrieval driven by users [28]. The system constructed emotion recognition by analyzing consistency feedbacks from the users.
- Solli and Lenz developed an image retrieval system involving bags of emotion [44]. The system used color emotion models derived from psychophysical experiments which are activity, weight and heat.
- Wang and He presented a survey on emotional semantic image retrieval [54]. The supervised learning techniques usually used to bridge semantic gap between image features and emotional semantics.

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Supervised models connecting user's emotion to the image search system

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Motivation of this research

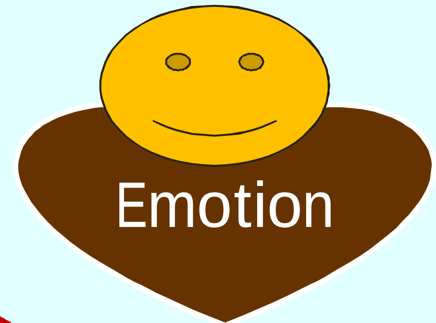
- This research presents a semantic image search system with an emotion oriented context recognition mechanism by connecting a series of emotion expressions to the color based impression.
- My motivation implementing an emotional context in the image search system is to express user's impressions for retrieval process
- The search system addresses a dynamic manipulation of unsupervised emotion recognition

Ali Ridho Barakbah, Yasushi Kiyoki, "A Semantic Image Search System with Analytical Functions of Cluster based Feature Extraction Using a Pillar Algorithm", Final Desertation, Keio University, 2010.

Motivation of this research

Image Query

Unsupervised Model for connecting user's emotion to the image search system



This research presents a semantic image search system with an emotion oriented context recognition mechanism by connecting a series of emotion expressions to the color based impression.

Image Search System

Emotion oriented Context Recognition Mechanism

The search system addresses a dynamic manipulation of unsupervised emotion recognition

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Image Segmentation for Pre-processing using Pillar Algorithm

- Noise removal
- Initial centroid optimization
- Color space transformation
- Data normalization
- K-means clustering

Ali Ridho Barakbah, Yasushi Kiyoki, "A New Approach for Image Segmentation using Pillar-Kmeans Algorithm", International Journal of Information and Communication Engineering, Vol. 6, No. 2, pp. 83-88, WASET, 2010.

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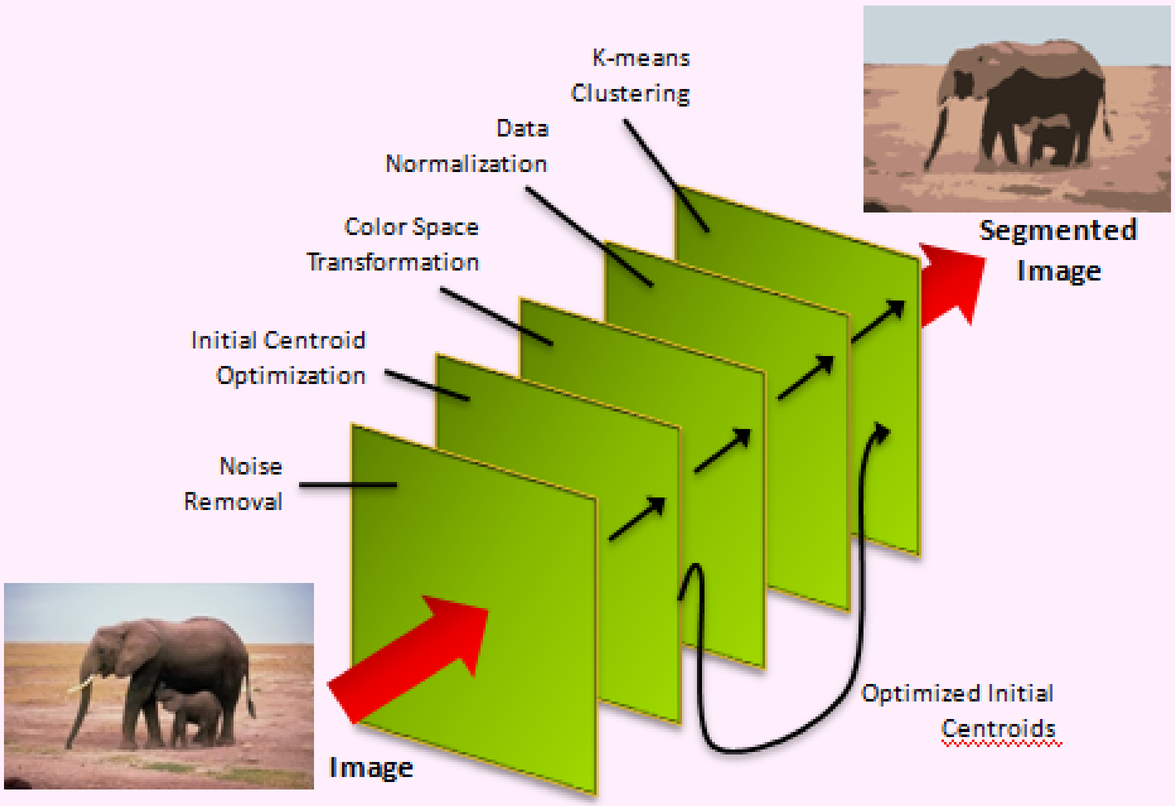

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Referensi

- Budi Rahardjo, *Panduan Menulis dan Mempresentasikan Karya Ilmiah:Thesis,Tugas Akhir, dan Makalah*, 2005.
- Simon Peyton Jones, *How to write a great research paper,* Microsoft Research, Cambridge